

MOREK

Creating a better future for You



ELECTRICAL COMPONENTS

2021

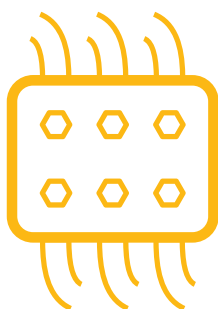


Morek brand products are quality products

Why Morek?

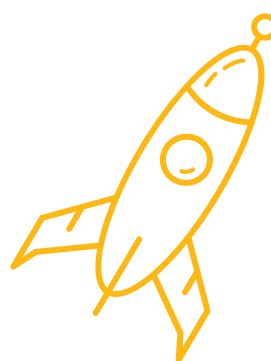
We, at Morek, strongly believe in creating a positive change in the electrical industry, helping our customers efficiently solve their issues, big and small, saving your money and time, creating a better future for you.

Through our long experience in the electrical industry, we know all the roadblocks our customers are facing day to day and how much time and effort is wasted every day to overcome them. Our goal is to eliminate these obstacles on the path to your success, so that you can devote your time to more important things.



Our tailor-made our product portfolio contains everything you need to manage the connections within an electrical cabinet, all in one place as a complete solution, so that you don't have to waste time on searching for required products from tens of different suppliers.

We offer smart and innovative technical solutions that often resolve complex technical issues in a simple and elegant way, with products that can save valuable space in the enclosure or replace more expensive products while improving technical functionality.

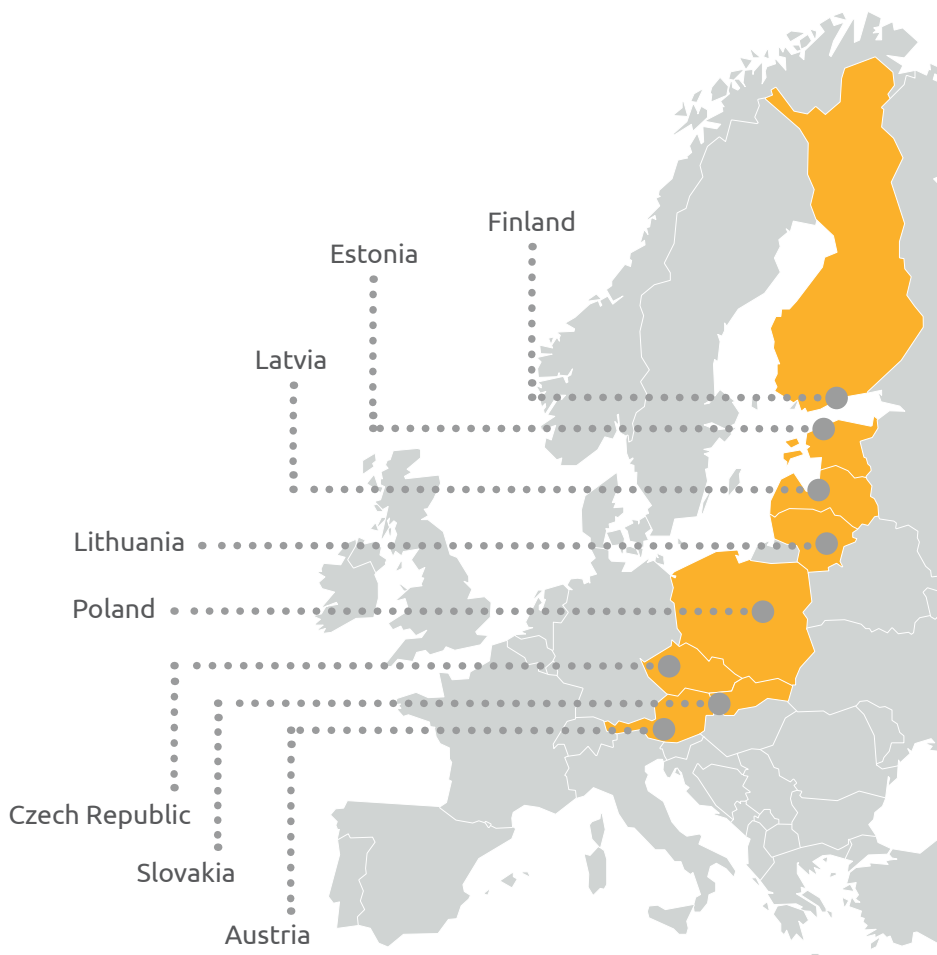


Our e-morek platform is designed to make the process of creating an order or requesting a quote as simple as possible, with intuitive interface, visible stock levels and personalized prices.

We provide our customers with a full technical database of our products, including ETIM format, along with product images and drawings, helping you integrate our solutions into your projects and systems.



We are dedicating our time and effort to solving your issues, simple and complex, technical and administrative. And of course, our products are of the highest quality. You can rely on that.



High runners



Universal terminals OTL
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Distribution blocks OJL
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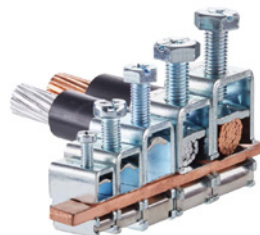
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Universal terminals OTL

1000 V
AC/DC

Bimetal
(Al/Cu)

Class A

Certified according to
standards EN 61238-1
and EN 60947-7-1



Universal terminals OTL are designed for copper and aluminium conductors. The terminals are suitable for all types of copper or aluminium conductors with cross-section up to 240 mm². Multiple copper wires can be placed to the universal terminals OTL blocks according to the respective terminal type (see Table of universal terminals OTL wiring connectivity on page 9). IP protection class for OTL terminals is IP20.



Certification and product safety

Universal terminals OTL are tested and certified by following standards:

EN 60947-7-1:2009 „Low-voltage switchgear and control gear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors“

EN 61238-1:2003 „Compression and mechanical connectors for power cables for rated voltages up to 30 kV (Um = 36 kV) - Part 1: Test methods and requirements“

All connectors used inside switchgears or similar appliances must fulfil these requirements.

EN 61238-1:2003 for copper and aluminium cables are divided into two classes.

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electricity distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.

Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.

Universal terminals OTL are tested and certified class A connectors.

For choosing safe and reliable connector, always make sure that the terminal is equipped with CE and Class A markings with the symbol of certifying institute, for example FI-mark.

Material classification according to UL 94 V-0 standard (vertical burning test)

| Criteria Conditions | 94 V-0 | 94 V-1 | 94 V-2 |
|--|----------|-----------|-----------|
| Total flaming combustion for each specimen | ≤ 10 sec | ≤ 30 sec | ≤ 30 sec |
| Total flaming combustion for all 5 specimens of any set | ≤ 50 sec | ≤ 250 sec | ≤ 250 sec |
| Flaming and glowing combustion for each specimen after second burner flame application | ≤ 30 sec | ≤ 60 sec | ≤ 60 sec |
| Cotton ignited by flaming drips from any specimen | No | No | Yes |

Universal terminals OTL wiring connectivity

In case of Aluminum wire, only one wire is allowed to connect per connection

| Type | Conductor cross-section (mm ²) / number of copper wires per connection | | | | | | | | | | | | | | Tightening torque (Nm) | In (A) Al / Cu | | | |
|-----------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------------|-------------------|---|-----------|--|
| | 1,5 | 2,5 | 4 | 6 | 10 | 16 | 25 | 35 | 50 | 70 | 95 | 120 | 150 | 185 | | | 240 | | |
| OTL 16 | 3 pcs | 3 pcs | 2 pcs | 2 pcs | 1 pcs | 1 pcs | | | | | | | | | | | 1,5 Nm (1,5 - 6 mm ²) 7 Nm (10 - 16 mm ²) | 75 / 82 | |
| OTL 35 | | | | | | | | | | | | | | | | | | | |
| OTL 35-2 | | | | | | | | | | | | | | | | | | | |
| OTL 35-3X | | 3 pcs | 3 pcs | 3 pcs | 3 pcs | 2 pcs | 1 pcs | 1 pcs | | | | | | | | | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) | 120 / 135 | |
| OTL 35-5X | | | | | | | | | | | | | | | | | | | |
| OTL 50 | | | | | | | | | | | | | | | | | | | |
| OTL 50-2 | 3 pcs | 3 pcs | 3 pcs | 3 pcs | 3 pcs | 3 pcs | 2 pcs | 1 pcs | 1 pcs | | | | | | | | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 145 / 160 | |
| OTL 50-3 | | | | | | | | | | | | | | | | | | | |
| OTL 95 | | | | | | | | | | | | | | | | | | | |
| OTL 95-2 | | | | 3 pcs | 3 pcs | 3 pcs | 3 pcs | 2 pcs | 1 pcs | 1 pcs | 1 pcs | | | | | | 12 Nm (6 - 25 mm ²) 22Nm (35 - 95 mm ²) | 220 / 245 | |
| OTL 95-3 | | | | | | | | | | | | | | | | | | | |
| OTL 150 | | | | | | | | | | | | | | | | | | | |
| OTL 150-2 | | | | | | | 3 pcs | 3 pcs | 3 pcs | 2 pcs | 1 pcs | 1 pcs | 1 pcs | | | | 14 Nm (25 - 50 mm ²) 30 Nm (70 - 150 mm ²) | 290 / 320 | |
| OTL 150-3 | | | | | | | | | | | | | | | | | | | |
| OTL 240 | | | | | | | | 3 pcs | 3 pcs | 3 pcs | 2 pcs | 2 pcs | 1 pcs | 1 pcs | 1 pcs | | 26 Nm (35 - 120 mm ²) 40 Nm (150 - 240 mm ²) | 380 / 425 | |
| OTL 240-2 | | | | | | | | | | | | | | | | | | | |

We recommend using cable end sleeves, when using fine-strand wires with following cross-sections (single-wire connections):

OTL 16: 1,5 mm²...6 mm²

OTL 35: 2,5 mm²...10 mm²

OTL 50: 1,5 mm²...16 mm²

OTL 95: 6 mm²...35 mm²

OTL 150: 25 mm²...70 mm²

OTL 240: 35 mm²...120 mm²



OTL 16

OTL 35

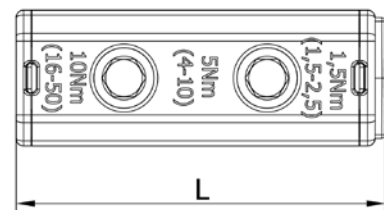
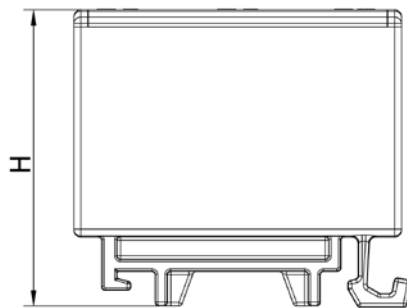
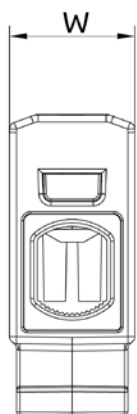
OTL 50

| | | | | |
|--------------|---|------------|------------|------------|
| Grey | ● | MAA1016A10 | MAA1035A10 | MAA1050A10 |
| Blue | ● | MAA1016B10 | MAA1035B10 | MAA1050B10 |
| Yellow-green | ● | MAA1016Y10 | MAA1035Y10 | MAA1050Y10 |
| Red | ● | MAA1016R10 | - | MAA1050R10 |
| Black | ● | MAA1016S10 | - | MAA1050S10 |

Technical data

| | | | |
|---|---|--|---|
| Conductor cross-section Cu, Al (mm ²) | 1,5 - 16 | 2,5 - 35 | 1,5 - 50 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 |
| Nominal current (A) | 82 (Cu) / 75 (Al) | 135 (Cu) / 120 (Al) | 160 (Cu) / 145 (Al) |
| Width / Height / Length (mm) | 13,5 / 39,5 / 45 | 16 / 40 / 45 | 18 / 43 / 50 |
| Screw, hexagonal key | No. 4 | No. 4 | No. 5 |
| Tightening torque (Nm) | 1,5 Nm (1,5 - 6 mm ²) 7 Nm (10 - 16 mm ²) - | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) - | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) |
| Mounting | DIN rail | DIN rail | DIN rail |
| Weight (g) | 17 | 27 | 30 |
| Package (pcs) | 30 | 30 | ● 50 / ● ● ● ● 30 |

Dimensions





OTL 95



OTL 150



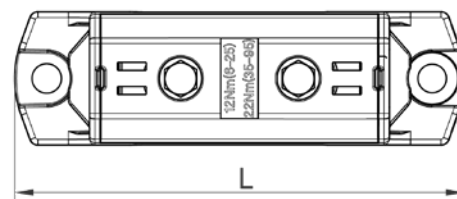
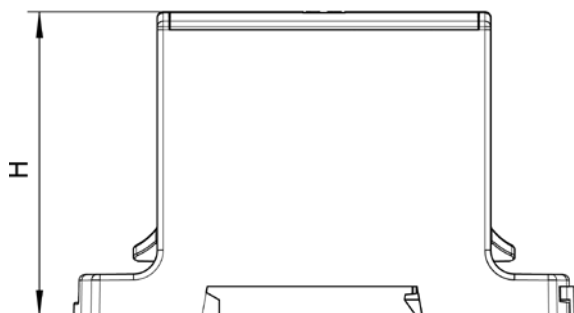
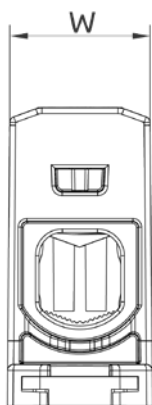
OTL 240

| | | | | |
|--------------|--|------------|------------|------------|
| Grey | | MAA1095A10 | MAA1150A10 | MAA1240A10 |
| Blue | | MAA1095B10 | MAA1150B10 | MAA1240B10 |
| Yellow-green | | MAA1095Y10 | MAA1150Y10 | MAA1240Y10 |
| Red | | MAA1095R10 | - | - |
| Black | | MAA1095S10 | - | - |

Technical data

| | | | |
|---|--|---|---|
| Conductor cross-section Cu, Al (mm ²) | 6 - 95 | 25 - 150 | 35 - 240 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 |
| Nominal current (A) | 245 (Cu) / 220 (Al) | 320 (Cu) / 290 (Al) | 425 (Cu) / 380 (Al) |
| Width / Height / Length (mm) | 25 / 51 / 84 | 31 / 54 / 84 | 37 / 65 / 106 |
| Screw, hexagonal key | No. 6 | No. 6 | No. 8 |
| Tightening torque (Nm) | 12 Nm (6 - 25 mm ²) 22 Nm (35 - 95 mm ²) - | 14 Nm (25 - 50 mm ²) 35 Nm (70 - 150 mm ²) | 26 Nm (35 - 120 mm ²) 46 Nm (150 - 240 mm ²) |
| Mounting | DIN rail, screw | DIN rail, screw | DIN rail, screw |
| Weight (g) | 65 | 100 | 195 |
| Package (pcs) | 20 / 10 | 20 / 10 | 10 / 3 |

Dimensions





OTL 35-2



OTL 50-2

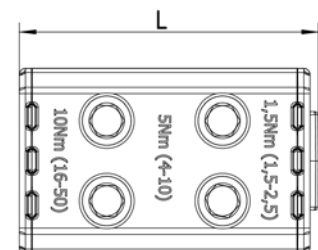
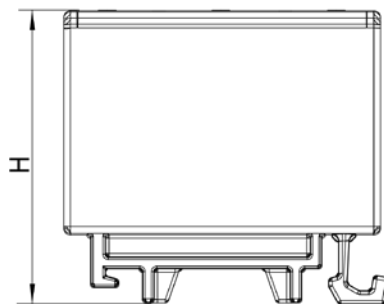
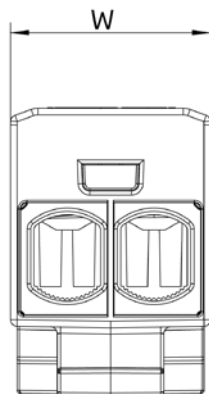


OTL 95-2

| | | | | |
|--------------|--|------------|------------|------------|
| Grey | | MAA2035A10 | MAA2050A10 | MAA2095A10 |
| Blue | | MAA2035B10 | MAA2050B10 | MAA2095B10 |
| Yellow-green | | MAA2035Y10 | MAA2050Y10 | MAA2095Y10 |
| Red | | - | MAA2050R10 | MAA2095R10 |
| Black | | - | MAA2050S10 | MAA2095S10 |

| Technical data | | | |
|---|--|---|--|
| Conductor cross-section Cu, Al (mm ²) | 2,5 - 35 | 1,5 - 50 | 6 - 95 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 |
| Nominal current (A) | 135 (Cu) / 120 (Al) | 320 (Cu) / 290 (Al) | 245 (Cu) / 220 (Al) |
| Width / Height / Length (mm) | 27 / 40 / 46 | 30 / 43 / 49 | 42 / 51 / 84 |
| Screw, hexagonal key | No. 4 | No. 5 | No. 6 |
| Tightening torque (Nm) | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) - | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 12 Nm (6 - 25 mm ²) 22 Nm (35 - 95 mm ²) - |
| Mounting | DIN rail | DIN rail | DIN rail, screw |
| Weight (g) | 44 | 90 | 125 |
| Package (pcs) | 18 | 15 | |

Dimensions





OTL 150-2



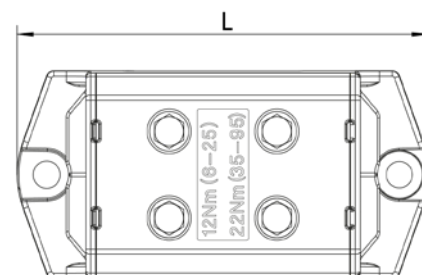
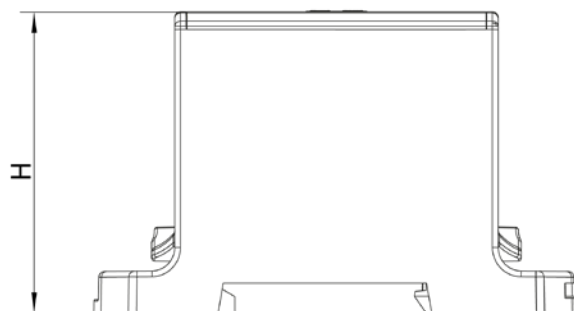
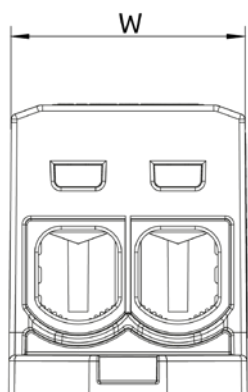
OTL 240-2

| | | | |
|--------------|--|------------|------------|
| Grey | | MAA2150A10 | MAA2240A10 |
| Blue | | MAA2150B10 | MAA2240B10 |
| Yellow-green | | MAA2150Y10 | MAA2240Y10 |
| Red | | - | - |
| Black | | - | - |

Technical data

| | | |
|---|--|--|
| Conductor cross-section Cu, Al (mm ²) | 25 - 150 | 35 - 240 |
| Nominal voltage AC / DC (V) | 1000 | 1000 |
| Nominal current (A) | 320 (Cu) / 290 (Al) | 425 (Cu) / 380 (Al) |
| Width / Height / Length (mm) | 51 / 54 / 84 | 60 / 65 / 106 |
| Screw, hexagonal key | No. 6 | No. 8 |
| Tightening torque (Nm) | 14 Nm (25 - 50 mm ²) 30 Nm (70 - 150 mm ²) - | 26 Nm (35 - 120 mm ²) 40 Nm (150 - 240 mm ²) - |
| Mounting | DIN rail, screw | DIN rail, screw |
| Weight (g) | 170 | 340 |
| Package (pcs) | 10 / 5 | 6 / 3 |

Dimensions





OTL 50-3



OTL 95-3



OTL 150-3



OTL 300-3

| | | | | | |
|--------------|--|------------|------------|------------|------------|
| Grey | | MAA3050A10 | MAA3095A10 | MAA3150A10 | MAA3300A10 |
| Blue | | MAA3050B10 | MAA3095B10 | MAA3150B10 | MAA3300B10 |
| Yellow-green | | MAA3050Y10 | MAA3095Y10 | MAA3150Y10 | MAA3300Y10 |

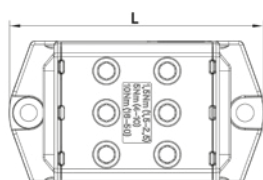
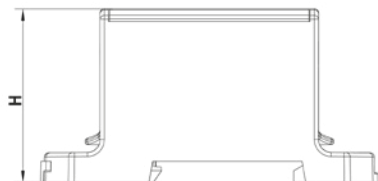
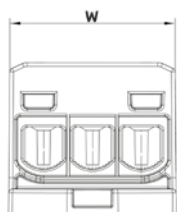
Technical data

| | | | | |
|---|---|--|--|--|
| Conductor cross-section Cu, Al (mm ²) | 1.5 - 50 | 6 - 95 | 25 - 150 | 95 - 300 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 | 1000 |
| Nominal current (A) | 160 (Cu) / 145 (Al) | 245 (Cu) / 220 (Al) | 320 (Cu) / 290 (Al) | 630 (Cu) / 630 (Al) |
| Width / Height / Length (mm) | 46 / 41 / 80 | 59 / 51 / 84 | 71 / 54 / 84 | 101 / 78 / 120 |
| Screw, hexagonal key | No. 5 | No. 6 | No. 6 | No. 8 |
| Tightening torque (Nm) | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 12 Nm (6 - 25 mm ²) 22 Nm (35 - 95 mm ²) - | 14 Nm (25 - 50 mm ²) 30 Nm (70 - 150 mm ²) - | 35 Nm (95 - 150 mm ²) 45 Nm (180 - 300 mm ²) - |
| Mounting | DIN rail, screw | DIN rail, screw | DIN rail, screw | DIN rail, screw |
| Weight (g) | 109 | 178 | 246 | 730 |
| Package (pcs) | 20 | 6 | 6 | 1 |

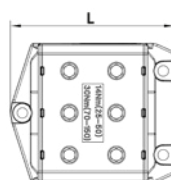
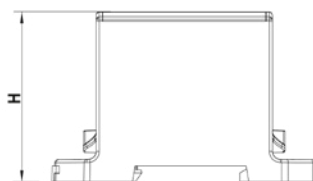
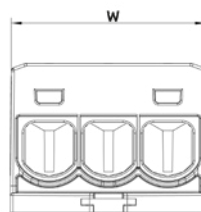
* 630A achievable by connecting multiple input cables.

Dimensions

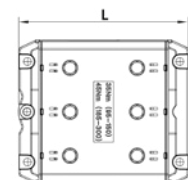
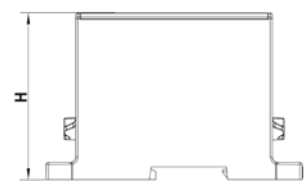
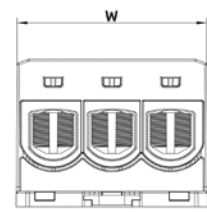
OTL 50-3



OTL 150-3



OTL 300-3





OTL 35-3X



OTL 50-3X



OTL 35-5X

| | | | | |
|--------------------------|--|------------|------------|------------|
| Grey | | MAA1335A10 | MAA1350A10 | - |
| Grey, Blue, Yellow-green | | - | - | MAA5035A10 |
| Yellow-green | | - | - | - |

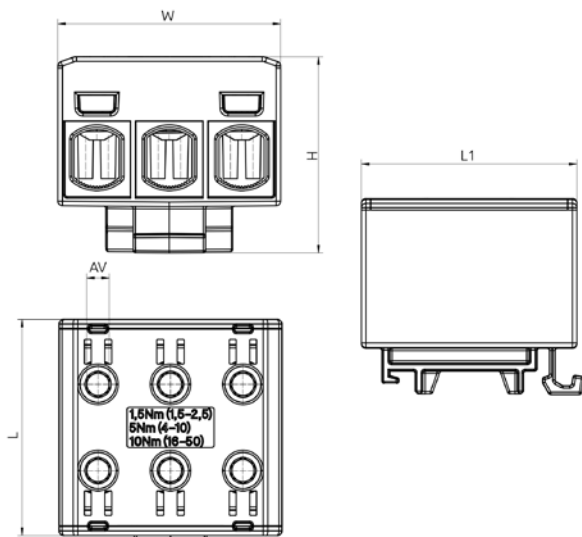
Technical data

| | | | |
|---|---|---|---|
| Conductor cross-section Cu, Al (mm ²) | 2,5 - 35 | 1,5 - 50 | 2,5 - 35 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 |
| Nominal current (A) | 3 x 135 (Cu) / 3 x 120 (Al) | 3 x 160 (Cu) / 3 x 145 (Al) | 3 x 135 (Cu) / 3 x 120 (Al) |
| Width / Height / Length (mm) | 46 / 40 / 46 | 49 / 43 / 49 | 79 / 40 / 65 |
| Screw, hexagonal key | No. 4 | No. 5 | No. 4 |
| Tightening torque (Nm) | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) |
| Mounting | DIN rail | DIN rail | DIN rail, screw |
| Weight (g) | 70 | 81 | 120 |
| Package (pcs) | 20 | 20 | 10 |

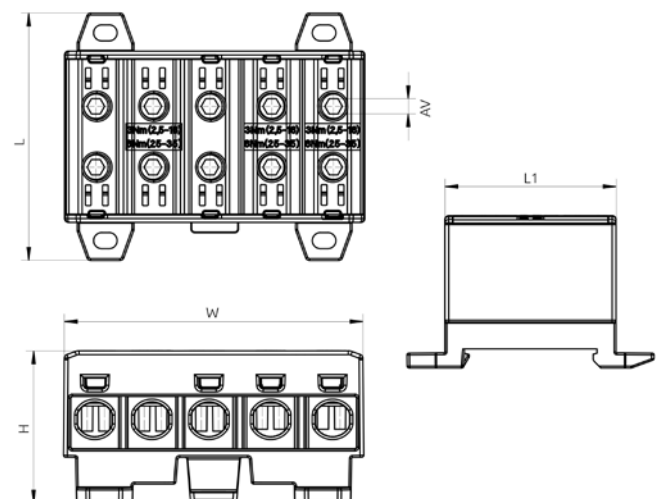
Dimensions

OTL 35-3X

OTL 50-3X



OTL 35-5X





OTL 50-2



OTL 95-2



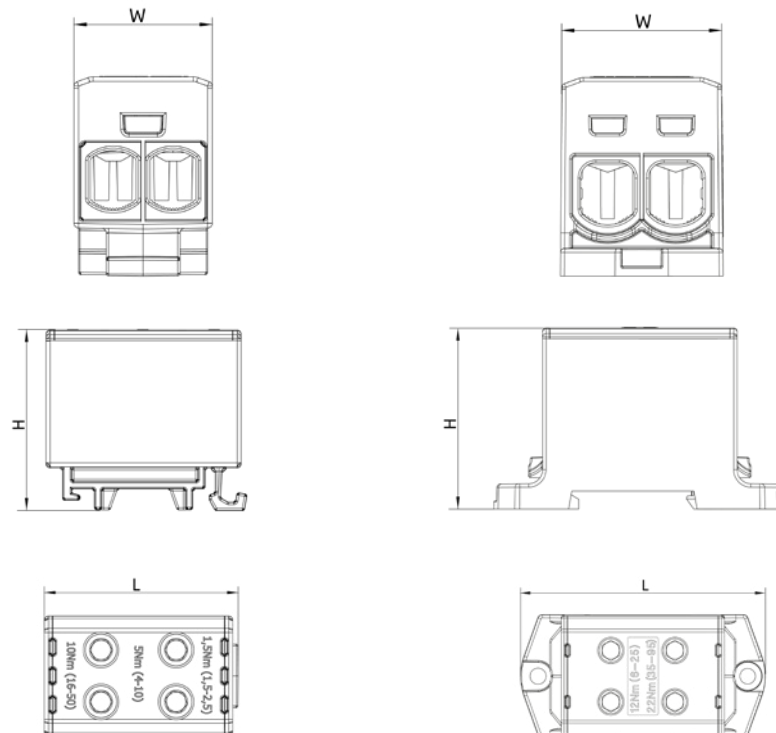
OTL 150-2



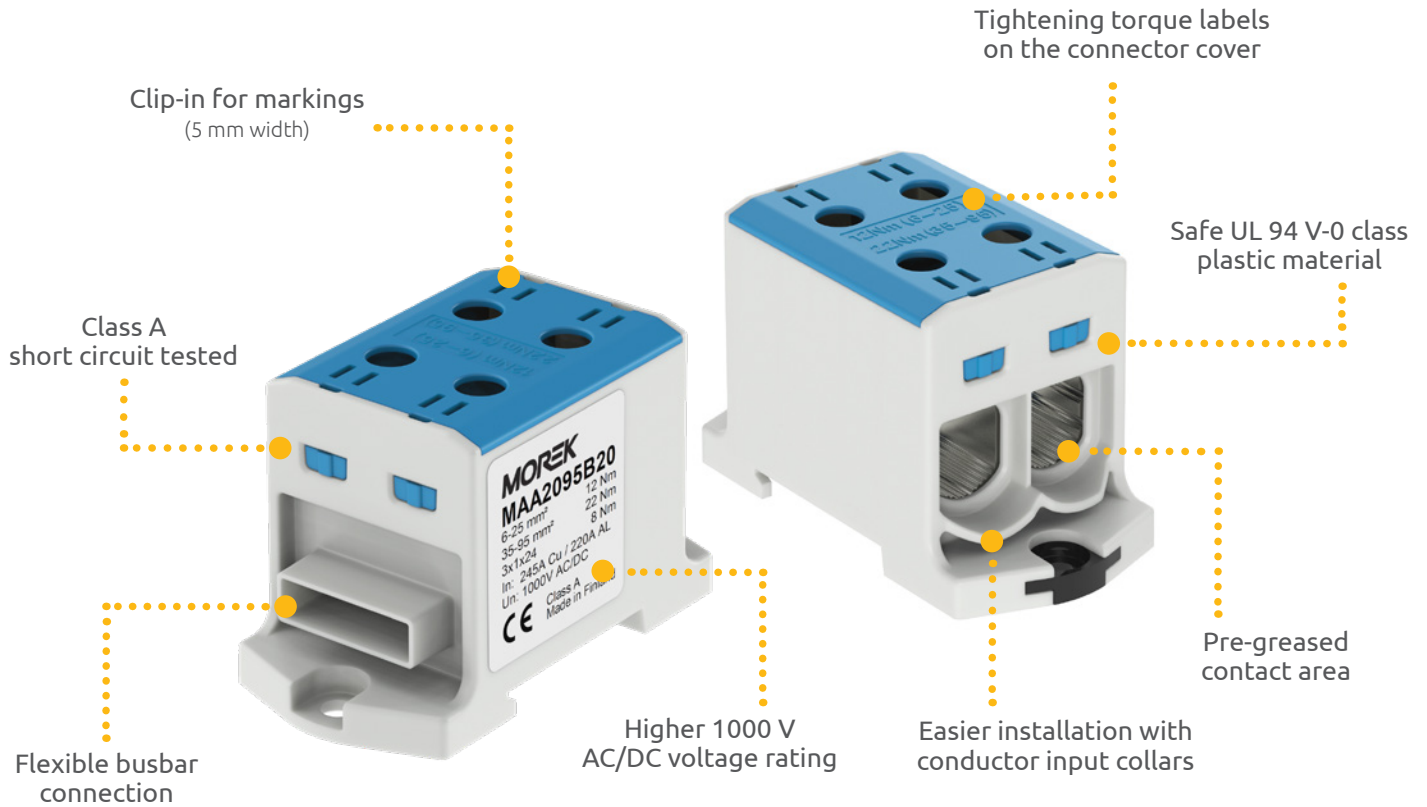
OTL 240-2

| | | | | | |
|---|--|---|--|--|--|
| Yellow-green-blue | | MAA2050P10 | MAA2095P10 | MAA2150P10 | MAA2240P10 |
| Technical data | | | | | |
| Conductor cross-section Cu, Al (mm ²) | | 1,5 - 50 | 6 - 95 | 25 - 150 | 35 - 240 |
| Nennspannung AC/DC [V] | | 1000 | 1000 | 1000 | 1000 |
| Nominal current (A) | | 320 (Cu) / 290 (Al) | 245 (Cu) / 220 (Al) | 320 (Cu) / 290 (Al) | 425 (Cu) / 380 (Al) |
| Width / Height / Length (mm) | | 30 / 43 / 49 | 42 / 51 / 84 | 51 / 54 / 84 | 60 / 65 / 106 |
| Screw, hexagonal key | | No. 5 | No. 6 | No. 6 | No. 8 |
| Tightening torque (Nm) | | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 12 Nm (6 - 25 mm ²) 22 Nm (35 - 95 mm ²) - | 14 Nm (25 - 50 mm ²) 30 Nm (70 - 150 mm ²) - | 26 Nm (35 - 120 mm ²) 40 Nm (150 - 240 mm ²) - |
| Mounting | | DIN rail | DIN rail, screw | DIN rail, screw | DIN rail, screw |
| Weight (g) | | 90 | 125 | 170 | 340 |
| Package (pcs) | | 15 | 18 | 5 | 3 |

Dimensions



New OTL terminals for flexible busbars are designed for connection of copper (bare or tinned) flexible busbars to copper or aluminium cable, with cable cross-sections of up to 300 mm² and flexible busbar dimensions of up to 6x1x40 mm. The terminals retain all the benefits of OTL terminals, including 1000V rating, UL94 V0 class plastic, Class A certification and many others!



Certification and product safety

Universal terminals OTL are tested and certified by following standards:

EN 60947-7-1:2009 „Low-voltage switchgear and control gear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors“

EN 61238-1:2003 „Compression and mechanical connectors for power cables for rated voltages up to 30 kV (Um = 36 kV) - Part 1: Test methods and requirements“

All connectors used inside switchgears or similar appliances must fulfil these requirements.

EN 61238-1:2003 for copper and aluminium cables are divided into two classes.

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electricity distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.

Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.

Universal terminals OTL are tested and certified class A connectors.

For choosing safe and reliable connector, always make sure that the terminal is equipped with CE and Class A markings with the symbol of certifying institute, for example FI -mark.



OTL 95-2B



OTL 300-3B

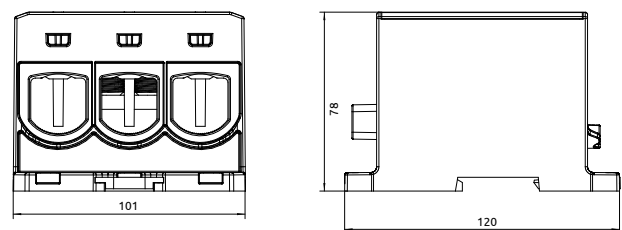
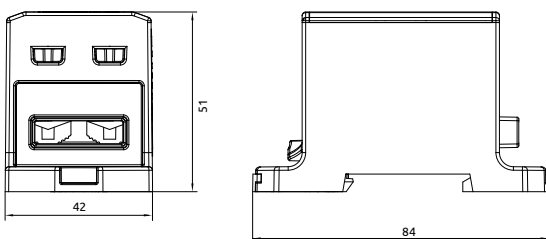
| | | | |
|--------------|---|------------|------------|
| Grey | ● | MAA2095A20 | MAA3300A20 |
| Blue | ● | MAA2095B20 | MAA3300B20 |
| Yellow-green | ● | MAA2095Y20 | MAA3300Y20 |

| Technical data | | |
|---|---|---|
| Conductor cross-section Cu, Al (mm ²) | 6 - 95 | 95 - 300 |
| Busbar cross-section, Cu (mm ²) | 3x1x24 | 3x1x32 - 6x1x40 |
| Nominal voltage AC / DC (V) | 1000 | 1000 |
| Nominal current (A) | 245 (Cu) / 220 (Al) | 630 (Cu) / 630 (Al) |
| Width / Height / Length (mm) | 42 / 51 / 84 | 101 / 78 / 120 |
| Screw, hexagonal key | No. 6 | No. 6, No. 8 |
| Tightening torque (Nm) | 12 Nm (6 - 25 mm ²) 22 Nm (35 - 95 mm ²) 8 Nm (3x1x24 mm) | 35 Nm (95 - 150 mm ²) 45 Nm (180 - 300 mm ²) 15 Nm (3x1x32 - 6x1x40 mm) |
| Mounting | DIN rail, screw | DIN rail, screw |
| Weight (g) | 125 | 499 |
| Package (pcs) | 15 | 1 |

Dimensions

OTL 95-2B

OTL 300-3B



Protective plastic covers are offered as accessories for universal terminals OTL. They are used for blanking unused connection space or for maintaining IP20 protection class when using wire with smaller cross-section. These accessories are offered for terminals series OTL 50, OTL 95, OTL 150 and OTL 240.



**Finger guard
OTL 50**

**Finger guard
OTL 95**

**Finger guard
OTL 150**

**Finger guard
OTL 240**

| | | | | |
|------|------------|------------|------------|------------|
| Grey | MAA0050A10 | MAA0095A10 | MAA0150A10 | MAA0240A10 |
|------|------------|------------|------------|------------|

Technical data

| | | | | |
|------------------------------|----------------|----------------|----------------|----------------|
| Width / Height / Length (mm) | 14 / 31,5 / 10 | 18,3 / 45 / 10 | 22 / 47,5 / 10 | 28 / 57,5 / 10 |
| Material | PA 66 | PA 66 | PA 66 | PA 66 |
| Weight (g) | 0,8 | 1,4 | 1,7 | 2,7 |
| Package (pcs) | 10 | 10 | 10 | 10 |

Contact grease SR-1

- Lubrication grease & rust inhibitor for electrical connectors
- Used both indoors and outdoors

Materials

- Lithium thickened grease, containing antioxidants and corrosion inhibitors

Warning: prolonged or repeated skin contact may irritate the skin and produce dermatitis.

Advantages

- Good protection against both copper and steel corrosion
- Prevention of oxidation of aluminium surfaces
- Reduction of transition resistance while used with wire brush

Standards

- DIN 51502 K2K-30
- ISO 6743 ISO-L-XCCHA2

Contact grease SR-1 250 ml



SR-1

| | |
|---------------------------|------------|
| Contact grease SR-1 250ml | MYA0001A10 |
|---------------------------|------------|

Technical data

| | |
|--|------------|
| Base oil viscosity / cSt at 40 °C | 112 |
| Base oil viscosity / cSt at 100 °C | 10 |
| Dropping point / °C | >180 |
| Temperature range / °C | -30 to 110 |
| Thickener | Lithium |
| SKF Emcor WWO distilled water / ISO 11007mod | 0-0 |
| Copper corrosion 24h / 100 °C / ASTM D4048 | 1b |
| Water resistance / DIN 51807 / 1 | 0-90 |
| Oil separation 168h / 40 °C / IP121 | 6% |

Distribution blocks OJL

1000 V
AC/DC

Bimetal
(Al/Cu)

Up to
400 A
240 mm²

Class A

Certified according to
standards EN 61238-1
and EN 60947-7-1



Distribution blocks OJL are intended for distributing conductors with larger cross-section to several smaller ones. These blocks are provided in 6 standard designs with a nominal connecting cross-section of 70 mm² Al/Cu (6 outputs for copper cable), 120 mm² Al/Cu (11 outputs for copper cable) and 240 mm² Al/Cu (7 outputs for copper cable). AF and AFS models are designed for connecting (input) of flexible busbars 10 x 25 mm or several other bars of 1 x 25 mm (look more about insulated copper flexible busbars Moflex on page 66).

The screws are tightened by a hexagonal key. Blocks can be installed on a standard DIN rail or can be mounted using screws on a flat solid surface. Maximum operating temperature is 80 °C. Cover sealing is possible on AS and AFS models. Housing for all design types has a protection class IP20.



OJL 200A



OJL 280A

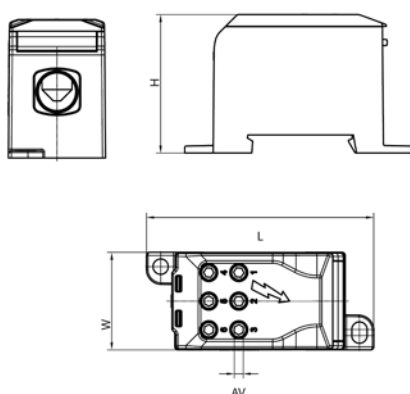
| | | | |
|--------------|--|------------|------------|
| Black / Grey | | MAB1201S10 | MAB1281S10 |
| Blue / Grey | | MAB1201B10 | MAB1281B10 |
| Green / Grey | | MAB1201G10 | MAB1281G10 |

Technical data

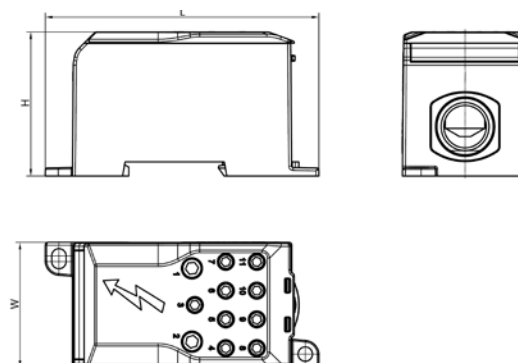
| Conductor cross-section | |
|-------------------------------------|--|
| Input wire Al/Cu (mm ²) | 1 x 10 - 70 |
| Output wire Cu (mm ²) | 6 x 2,5 - 16 |
| Nominal voltage AC / DC (V) | 1000 |
| Nominal current (A) | 200 (Cu) / 160 (Al) |
| Width / Height / Length (mm) | 32,4 / 46 / 75,8 |
| Screw, hexagonal key | No. 3 / 5 |
| Tightening torque (Nm) | 3 Nm (2,5 - 16 mm ²) 6 Nm (25 - 35 mm ²) 10 Nm (50 - 70 mm ²) - |
| Mounting | DIN rail, screw |
| Weight (g) | 84 |
| Package (pcs) | 24 |

Dimensions

OJL 200A



OJL 280A





OJL 400A

OJL 400AS*

OJL 400AF

OJL 400ASF*

| | | | | | |
|--------------|--|------------|------------|------------|------------|
| Black / Grey | | MAB1401S10 | MAB1402S10 | MAB1403S10 | MAB1404S10 |
| Blue / Grey | | MAB1401B10 | - | MAB1403B10 | - |
| Green / Grey | | MAB1401G10 | - | MAB1403G10 | - |

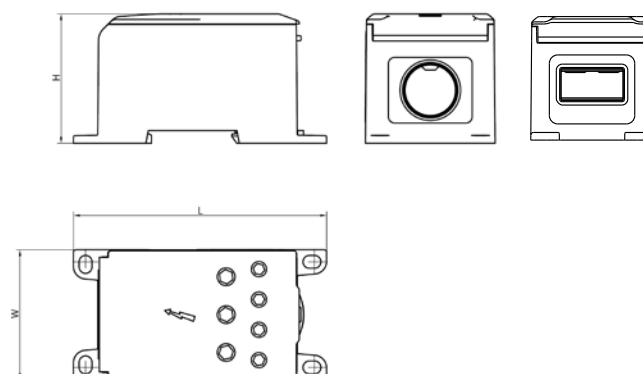
Technical data

| Conductor cross-section | | | | | |
|-------------------------------------|--|--|---|---|--|
| Input wire Al/Cu (mm ²) | 1 x 95 - 240 | 1 x 95 - 240 | 1 x Flexible busbar 10x Cu (1x25) | 1 x Flexible busbar 10x Cu (1x25) | |
| Output wire Cu (mm ²) | 4 x 2,5 - 35 3 x 6 - 50 | 4 x 2,5 - 35 3 x 6 - 50 | 4 x 2,5 - 35 3 x 6 - 50 | 4 x 2,5 - 35 3 x 6 - 50 | |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 | 1000 | |
| Nominal current (A) | 425 (Cu) / 380 (Al) | 425 (Cu) / 380 (Al) | 425 (Cu) / 380 (Al) | 425 (Cu) / 380 (Al) | |
| Width / Height / Length (mm) | 51,4 / 51,2 / 100,3 | 51,4 / 51,2 / 100,3 | 51,4 / 51,2 / 100,3 | 51,4 / 51,2 / 100,3 | |
| Screw, hexagonal key | No. 4 / 5 / 8 | No. 4 / 5 / 8 | No. 4 / 5 | No. 4 / 5 | |
| Tightening torque (Nm) | 6 Nm (2,5 - 35 mm ²) 10 Nm (6 - 50 mm ²) 19 Nm (95 - 240 mm ²) | 6 Nm (2,5 - 35 mm ²) 10 Nm (6 - 50 mm ²) 19 Nm (95 - 240 mm ²) | 6 Nm (2,5 - 35 mm ²) 10 Nm (6 - 50 mm ²) 10 Nm (10x Cu 1x25 mm ²) | 6 Nm (2,5 - 35 mm ²) 10 Nm (6 - 50 mm ²) 10 Nm (10x Cu 1x25 mm ²) | |
| Mounting | DIN rail, screw | DIN rail, screw | DIN rail, screw | DIN rail, screw | |
| Weight (g) | 250 | 250 | 247 | 247 | |
| Package (pcs) | 8 | 8 | 8 | 8 | |

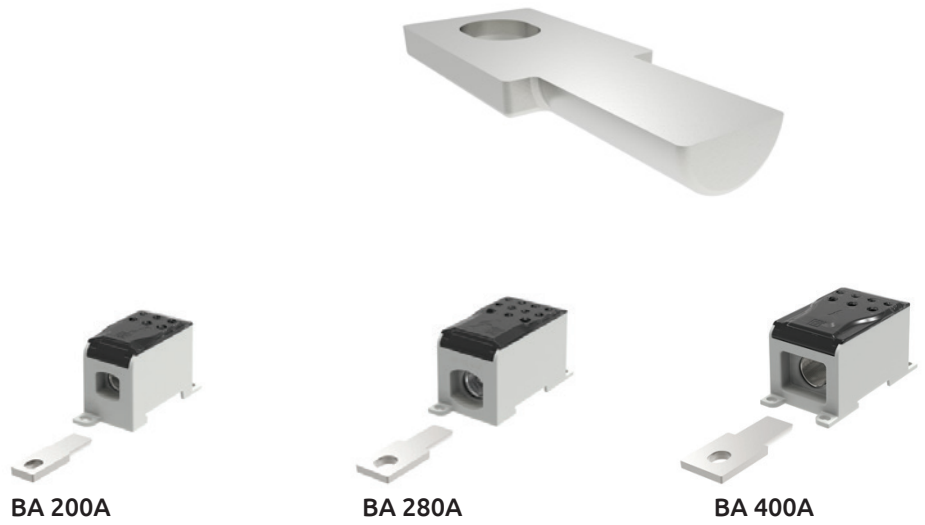
* Model can be sealed.

Dimensions

OJL 400A

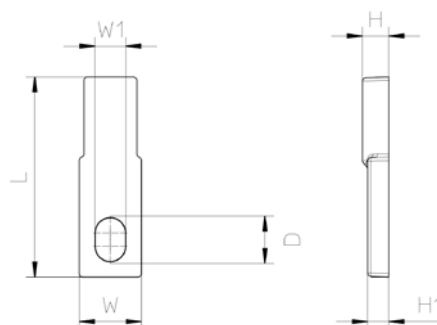


OJL busbar adapters are used for connecting OJL connectors to copper or aluminium busbars.
Materials: Tin plated copper



| | | | |
|-----------------------|------------|------------|------------|
| Grey | MAB1201EBA | MAB1281EBA | MAB1401EBA |
| Technical data | | | |
| D | 9,8 | 13,8 | 13,8 |
| H | 5,95 | 7,25 | 9,75 |
| H1 | 4,8 | 5 | 5,2 |
| L | 45 | 61 | 70 |
| W | 14 | 23 | 30 |
| W1 | 6,8 | 10,8 | 10,8 |
| Weight (g) | 22 | 49 | 90 |
| Package (pcs) | 24 | 12 | 8 |

Dimensions



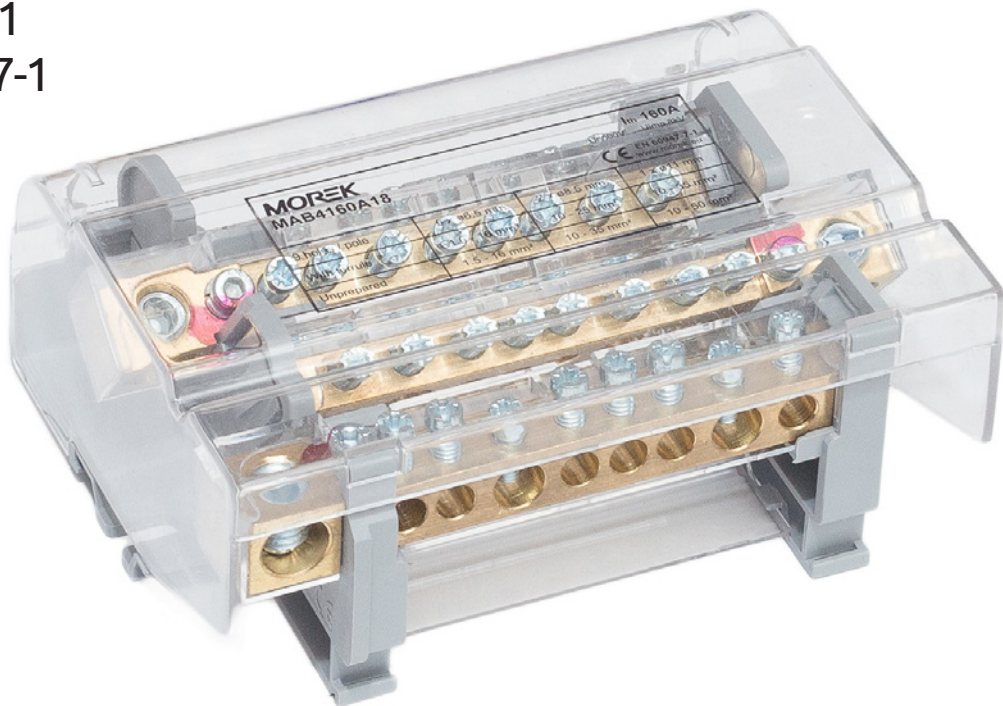
Distribution blocks Moblock

Up to

160 A
50 mm²

Insulation
between
phases

Certified according
to standards
EN 60947-1
EN 60947-7-1



Distribution blocks Moblock are offered in two-pole (up to 35 mm² and 125A) and four-pole (up to 50 mm² and 160A) versions. Terminal blocks are placed on isolated brackets and are covered with easily removable transparent plastic cover. Terminal blocks are covered with a plastic part also from the bottom and between each busbar an insulating barrier is included.

Installation is possible on the DIN rail or panel using screws.

Conductive part is made of brass, the connecting parts are made of steel, Zn galvanized.

For convenient and easy connection, the 160A type input is separated on the busbar from the outputs. Massive 50 mm² endpoint on the busbar does not limit current capacity of the block and is set into the reinforced plastic housing.



**Moblock 2P
100A-7**

**Moblock 2P
125A-11**

**Moblock 2P
125A-15**

Order code

MAB2100A18

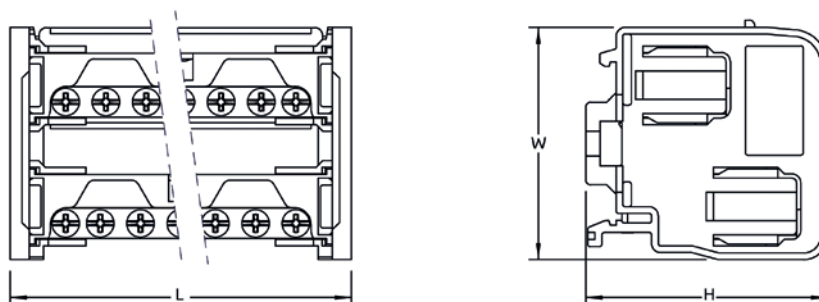
MAB2125A18

MAB2126A18

Technical data

| Conductor cross section (per pole) | | | |
|---|-----------------|---------------------------|----------------------------|
| Input wire Cu (mm ²) | 2 x 10 - 25 | 2 x 10 - 35 | 2 x 10 - 35 |
| Output wire Cu (mm ²) | 5 x 1,5 - 6 | 7 x 1,5 - 6 / 2 x 10 - 25 | 11 x 1,5 - 6 / 2 x 10 - 25 |
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 |
| Nominal current (A) | 100 | 125 | 125 |
| Width / Height / Length (mm) | 49 / 52 / 72 | 49 / 52 / 109 | 49 / 52 / 137 |
| Short-circuit current peak I _{pk} (kA) | 20 | 19 | 19 |
| Short-circuit resistance (kA / 1s) | 3 | 4,2 | 4,2 |
| Rated surge voltage (kV) | 8 | 8 | 8 |
| Min. length of insulated wire (mm) | 13 | 13 | 13 |
| Tightening torque (Nm) | 2,5 | 2,5 | 2,5 |
| Mounting | DIN rail, screw | DIN rail, screw | DIN rail, screw |
| Weight (g) | 107 | 152 | 197 |
| Package (pcs) | 4 | 2 | 2 |

Dimensions

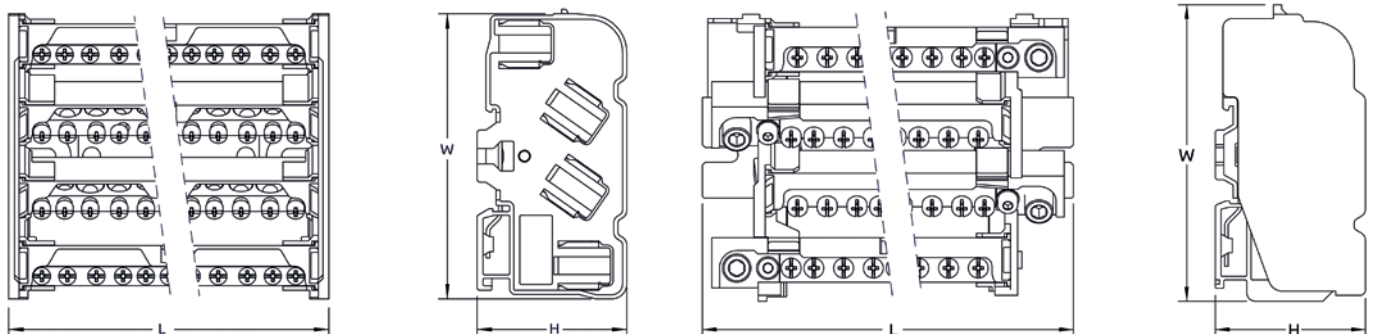




| Order code | Moblock 4P 100A-7 | Moblock 4P 125A-11 | Moblock 4P 125A-15 | Moblock 4P 160A-9 | Moblock 4P 160A-14 |
|------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|
| | MAB4100A18 | MAB4125A18 | MAB4126A18 | MAB4160A18 | MAB4161A18 |

| Technical data | | | | | |
|---|-----------------|---------------------------|----------------------------|----------------------------|----------------------------|
| Conductor cross section (per pole) | | | | | |
| Input wire Cu (mm ²) | 2 x 10 - 25 | 2 x 10 - 35 | 2 x 10 - 35 | 1 x 10 - 50 | 1 x 10 - 50 |
| Output wire Cu (mm ²) | 5 x 1,5 - 6 | 7 x 1,5 - 6 / 2 x 10 - 25 | 11 x 1,5 - 6 / 2 x 10 - 25 | 6 x 1,5 - 16 / 2 x 10 - 35 | 9 x 1,5 - 16 / 4 x 10 - 35 |
| Nominal voltage AC / DC (V) | 500 | 500 | 500 | 500 | 500 |
| Nominal current (A) | 100 | 125 | 125 | 160 | 160 |
| Width / Height / Length (mm) | 97 / 52 / 71 | 97 / 52 / 108 | 97 / 52 / 137 | 99 / 54 / 131 | 99 / 54 / 181 |
| Short-circuit current peak I _{pk} (kA) | 20 | 19 | 19 | 28 | 28 |
| Short-circuit resistance (kA/1s) | 3 | 4,2 | 4,2 | 6 | 6 |
| Rated surge voltage (kV) | 8 | 8 | 8 | 8 | 8 |
| Min. length of insulated wire (mm) | 13 | 13 | 13 | 13 | 13 |
| Tightening torque (Nm) | 2,5 | 2,5 | 2,5 | 2,5 (input wire 10 Nm) | 2,5 (input wire 10 Nm) |
| Mounting | DIN rail, screw | DIN rail, screw | DIN rail, screw | DIN rail, screw | DIN rail, screw |
| Weight (g) | 210 | 300 | 386 | 504 | 696 |
| Package (pcs) | 2 | 1 | 1 | 1 | 1 |

Dimensions



Using OT-PEN connectors, you can easily split TN-C (PEN) system into TN-S (PE+N) by removing the connecting bridge between the terminals. OT-PEN connectors are designed to be used with both

copper and aluminium conductors; all connectors are equipped with extra measuring terminals and are screw-mounted directly to the backplate of the cabinet.



OT-PEN 50

OT-PEN 95

OT-PEN 120

OT-PEN 150

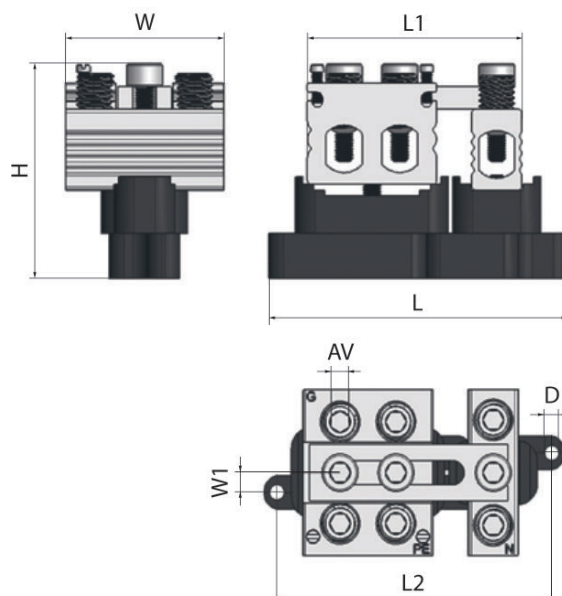
OT-PEN 240

| | | | | | |
|--|------------|------------|------------|------------|------------|
| | MAB3050S10 | MAB3095S10 | MAB3120S10 | MAB3150S10 | MAB3240S10 |
|--|------------|------------|------------|------------|------------|

Technical data

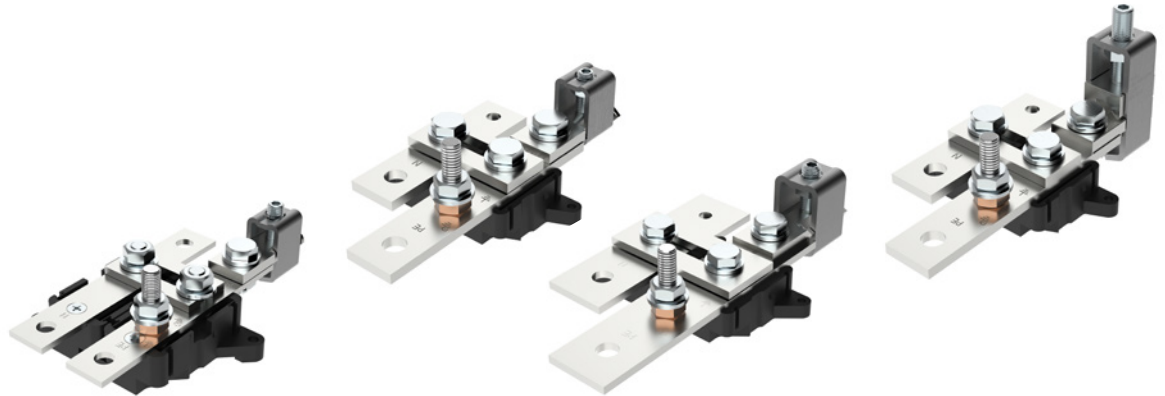
| | | | | | |
|---|---|--|---|---|---|
| Conductor cross-section Cu, Al (mm ²) | 1,5 - 50 | 6 - 95 | 16 - 120 | 25 - 150 | 35 - 240 |
| Nominal voltage (V) | 690 | 690 | 690 | 690 | 690 |
| Width / Height / Length (mm) | 44 / 57 / 83 | 64 / 80 / 83 | 64 / 87 / 120 | 64 / 91 / 120 | 64 / 101,6 / 134,90 |
| Dimensions L1 / L2 / W1 / AV / D (mm) | 60 / 76 / 5,25 / 5 / 4 | 63,5 / 76 / 5,25 / 6 / 4 | 81,5 / 104 / 21 / 6 / 6 | 82 / 104 / 21 / 6 / 6 | 104,5 / 119 / 21 / 8 / 6 |
| Screw, hexagonal key | No. 5 | No. 6 | No. 6 | No. 6 | No. 8 |
| Tightening torque (Nm) | 1,5 Nm (1,5 - 2,5 mm ²) 5 Nm (4 - 16 mm ²) 10 Nm (25 - 50 mm ²) | 5 Nm (6 - 16 mm ²) 22 Nm (25 - 95 mm ²) | 5 Nm (16 mm ²) 26 Nm (25 - 120 mm ²) | 14 Nm (25 - 50 mm ²) 30 Nm (70 - 150 mm ²) | 26 Nm (35 - 120 mm ²) 40 Nm (150 - 240 mm ²) |
| Mounting | Screw | Screw | Screw | Screw | Screw |
| Weight (g) | 174 | 356 | 573 | 605 | 813 |
| Package (pcs) | 9 | 9 | 5 | 5 | 5 |

Dimensions



Using OL-PEN connectors, you can easily split TN-C (PEN) system into TN-S (PE+N) by removing the connecting bridge between the terminals. OL-PEN connectors are designed to be used with both

copper and aluminium conductors and are screw-mounted directly to the backplate of the cabinet.



OL-PEN 95

OL-PEN 185

OL-PEN 300

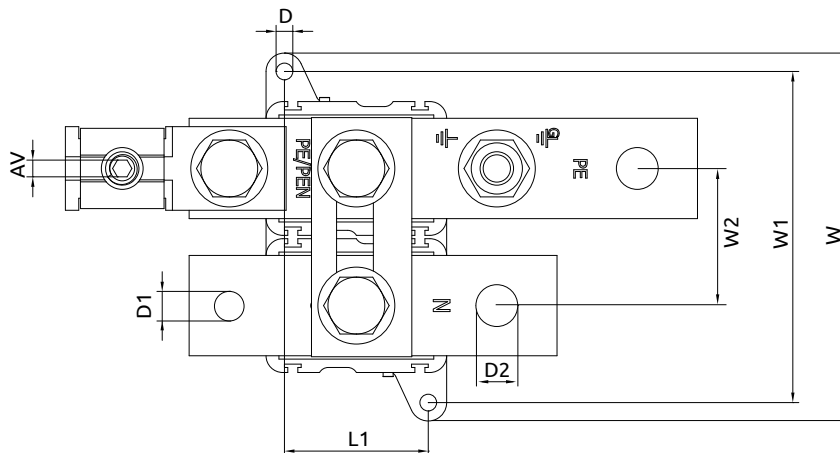
OL-PEN 240-2

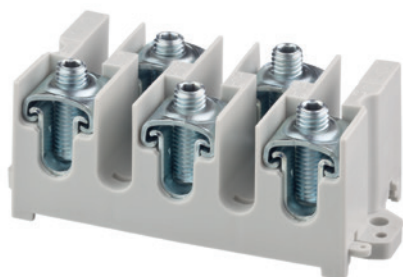
| | | | | |
|--|------------|------------|------------|------------|
| | MAJ4095S10 | MAJ4185S10 | MAJ4300S10 | MAJ5240S10 |
|--|------------|------------|------------|------------|

Technical data

| | | | | |
|---|------------------------------|-------------------------------|-----------------------------------|-------------------------------|
| Conductor cross-section Cu, Al (mm ²) | 25 - 95 | 95 - 185 | 185 - 300 | 2x 95 - 240 |
| Nominal voltage (V) | 690 | 690 | 690 | 690 |
| Width / Height / Length (mm) | 94 / 55 / 144 | 110 / 70 / 187,5 | 128,5 / 70 / 220 | 110 / 86 / 193 |
| Dimensions L1 / W1 / W2 / D / D1 / D2 (mm) | 50 / 84 / 34 / 5 / 8,5 / 8,5 | 43 / 99 / 41 / 5 / 8,5 / 12,5 | 52 / 117,5 / 50,5 / 5 / 10 / 12,5 | 43 / 99 / 41 / 5 / 8,5 / 12,5 |
| Screw, hexagonal key (AV) | No. 4 | No. 5 | No. 6 | No. 6 |
| Tightening torque (Nm) | 20 | 30 | 70 | 70 |
| Mounting | Screw | Screw | Screw | Screw |
| Weight (g) | 392 | 882 | 1248 | 1074 |
| Package (pcs) | 1 | 1 | 1 | 1 |

Dimensions





5 pole terminal plate is designed to connect copper cables in the range of 2,5 to 16 mm². Feed-through wires can be placed into the terminal without cutting the conductor. Branching wires can be connected additionally to the feed-through wire.

The terminal is equipped with galvanized steel bracket with screws, which can be tightened by a hexagonal key. These brackets can be easily removed for quick insertion of feed-through wires, but they are locked against falling out of the terminals.

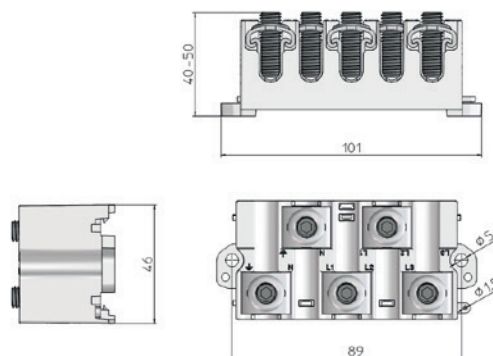
The insulating part is made of polyamide PA6, grey color (RAL 7035). Product is equipped with fastening snaps for insulating cover (available separately). Terminal plate can be mounted on DIN rail or with screws on a flat solid surface.

MAB 16x5

| | |
|---|--|
| | MAB5016A10 |
| Technical data | |
| Conductor cross-section Cu (mm ²) | 5 x 2,5 - 16 |
| Nominal voltage (V) | 690 |
| Nominal current (A) | 124 |
| Width / Height / Length (mm) | 46 / 50 / 101 |
| Screw, hexagonal key | No. 4 |
| Tightening torque (Nm) | 3 Nm (2,5 - 6 mm ²) 5 Nm (10 - 16 mm ²) |
| Mounting | DIN rail, screw |
| Weight (g) | 145 |
| Package (pcs) | 50 |

Max. number of conductors per one connection point

| Wire | Max. number of wires | Tightening torque |
|------------------------|----------------------|-------------------|
| Cu 2.5 mm ² | 8 pcs | 3 Nm |
| Cu 4 mm ² | 6 pcs | 3 Nm |
| Cu 6 mm ² | 6 pcs | 3 Nm |
| Cu 10 mm ² | 4 pcs | 5 Nm |
| Cu 16 mm ² | 2 pcs | 5 Nm |



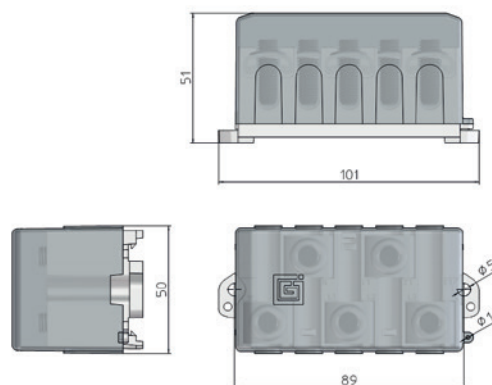
Terminal plate cover (IP20)



MAB 16x5 Cover

| | |
|------------------------------|--------------|
| | MAB5017A10 |
| Technical data | |
| Width / Height / Length (mm) | 50 / 43 / 89 |
| Weight (g) | 18 |
| Package (pcs) | 50 |

Insulating cover for terminal plate (IP20). Cover can be sealed on to terminal plate.



Device connectors SR

Direct connection
to the device

Bimetal (Al/Cu)

Class A

Certified according to standards EN 61238-1 and EN 60947-7-1



Device connectors SR are designed to reduce of connection cross-sections Cu and Al conductors for circuit breakers, controls and other devices. According to the Dimensions of the connection openings and equipment supply wire gauge can choose the appropriate corresponding reduction clamp. The clamp and the tightening screw are made of tin and aluminium insulating part is of fire-retardant polyamide.

Device connectors SR are designed to connect aluminium and copper cables directly to the device. The material of the body and tightening screws is aluminium with tin plating. Plastic cover is made of self-extinguishing polyamide. IP protection class for SR terminals is IP20.



SR 50 SR 50M SR 2x50RB SR 95 SR 95M

| | | | | | |
|--------------|------------|------------|------------|------------|------------|
| Left handed | MAC1055A10 | MAC1053A10 | - | MAC9506A10 | MAC9508A10 |
| Standard | MAC1050A10 | MAC1051A10 | MAC2050A10 | MAC9500A10 | MAC9501A10 |
| Right handed | MAC1054A10 | MAC1052A10 | - | MAC9507A10 | MAC9509A10 |

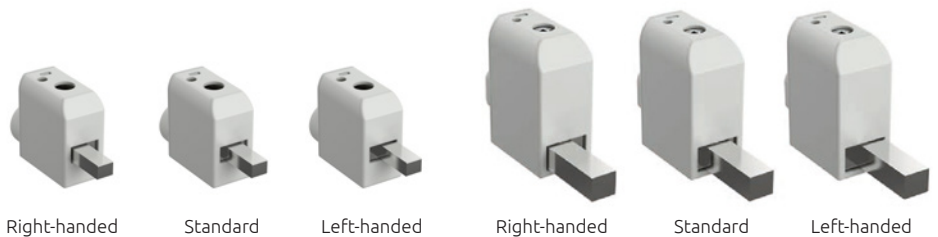
Technical data

| | | | | | |
|---|--|--|--|--|--|
| Conductor cross-section Cu, Al (mm ²) | 6 - 50 | 6 - 50 | 2 x 6 - 50 | 16 - 95 | 16 - 95 |
| Measurement wire | - | 2,5 | - | . | 2,5 |
| Nominal voltage AC / DC (V) | 690 | 690 | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 160 / 100 | 160 / 100 | 320 / 250 | 230 / 180 | 230 / 180 |
| Width / Height / Length (mm) | 17 / 32 / 49,8 | 17 / 32 / 49,8 | 22,4 / 41,2 / 71,8 | 23,4 / 51 / 67,8 | 23,4 / 51 / 67,8 |
| Dimensions L1 / H1 / H2 / W1 (mm) | 14,6 / 5 / 10 / 6 | 14,6 / 5 / 10 / 6 | 27,3 / 11,4 / 10,3 / 11,8 | 26,6 / 9 / 3,5 / 10 | 26,6 / 9 / 3,5 / 10 |
| Screw, hexagonal key | No. 5 | No. 5 | No. 5 | No. 6 | No. 6 |
| Tightening torque (Nm) | 6 Nm (6 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 6 Nm (6 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 6 Nm (6 - 10 mm ²) 10 Nm (16 - 50 mm ²) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) |
| Weight (g) | 22,8 | 23,2 | 26,2 | 56 | 56 |
| Package (pcs) | 50 | 50 | 30 | 30 | 30 |

Model specification (marking) **M** - model has connector for measurement | **RB** - rounded busbar

SR 50(M)

SR 95(M)

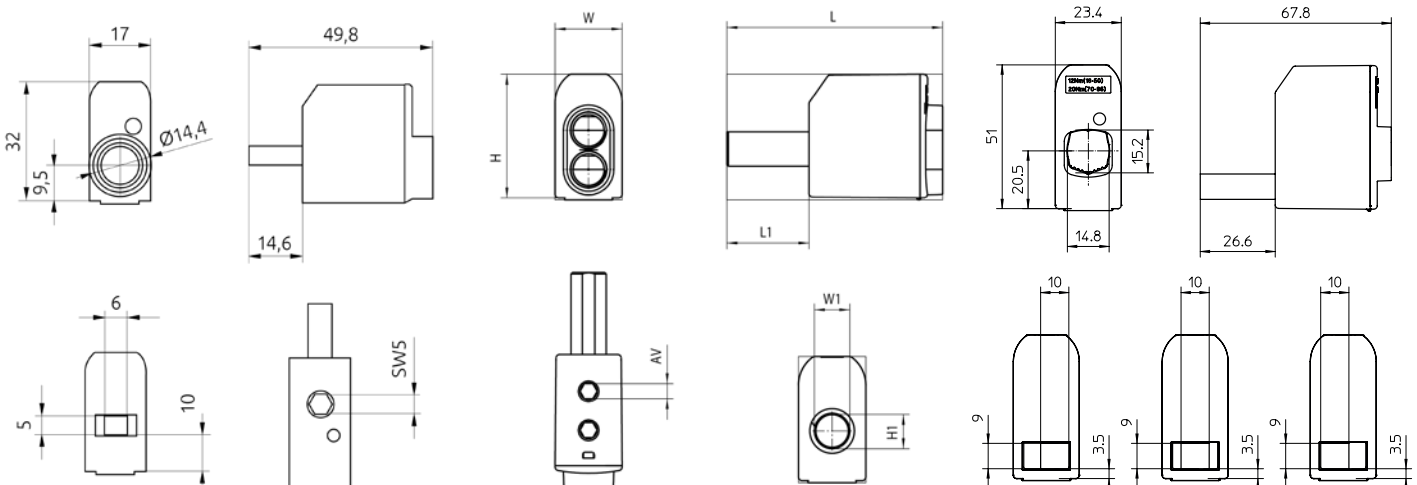


Dimensions

SR 50(M)

SR 2x50RB

SR 95(M)





SR 95SB

SR 95SBM



SR 95RB

SR 95RBM

| | | | | |
|--------------|------------|------------|------------|------------|
| Left handed | - | - | MAC9510A10 | MAC9513A10 |
| Standard | MAC9505A10 | MAC9503A10 | MAC9504A10 | MAC9502A10 |
| Right handed | - | - | MAC9511A10 | MAC9512A10 |

Technical data

| | | | | |
|---|--|--|--|--|
| Conductor cross-section Cu, Al (mm ²) | 16 - 95 | 16 - 95 | 16 - 95 | 16 - 95 |
| Measurement wire | - | 2,5 | - | 2,5 |
| Nominal voltage AC / DC (V) | 690 | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 230 / 180 | 230 / 180 | 230 / 180 | 230 / 180 |
| Width / Height / Length (mm) | 23,4 / 51 / 67,8 | 23,4 / 51 / 67,8 | 23,4 / 51 / 67,8 | 23,4 / 51 / 67,8 |
| Dimensions L1 / H1 / H2 / W1 (mm) | 26,6 / 9 / 3,5 / 16 | 26,6 / 9 / 3,5 / 16 | 16,6 / 9 / 3,5 / 10 | 16,6 / 9 / 3,5 / 10 |
| Screw, hexagonal key | No. 6 | No. 6 | No. 6 | No. 6 |
| Tightening torque (Nm) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) | 12 Nm (16 - 50 mm ²) 20 Nm (70 - 95 mm ²) |
| Weight (g) | 58 | 58 | 56 / 58 | 56 / 58 |
| Package (pcs) | 30 | 30 | 30 | 30 |

Model specification (marking) **M** - model has connector for measurement | **RB** - rounded busbar

SR 95RB(M)



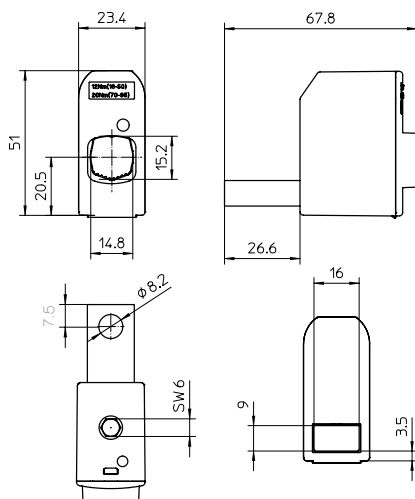
Right-handed

Standard

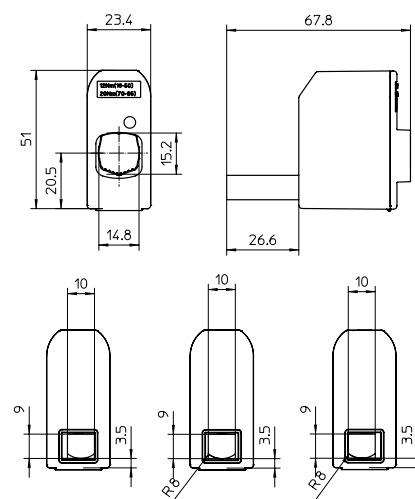
Left-handed

Dimensions

SR 95SB(M)



SR 95RB(M)



Heavy duty connectors OL

Up to

800 A

2x300 mm²

**Bimetal
(Al/Cu)**

Made of

**stainless
steel**

– suitable for harsh
environments



Heavy duty connectors OL are intended for connecting copper and aluminium conductors in nominal cross-section from 6 to 2 x 300 mm². Heavy duty connectors OL are designed for connecting one or two conductors. Individual parts of terminals are made of stainless steel (clamp), copper (bridge) and steel (screw).

These connectors are heavy duty. Clamping them with stranded conductors does not require modification of wire ends (clamping surface of terminal, not flat screw spot). The installation can be performed without use of special tools.



OL 70



OL 70M



OL 70T



OL 95



OL 95T



OL 150

| | | | | | | |
|--|------------|------------|------------|------------|------------|------------|
| | MAJ1070E10 | MAJ1071E10 | MAJ1072E10 | MAJ1095E10 | MAJ1096E10 | MAJ1150E10 |
|--|------------|------------|------------|------------|------------|------------|

| Technical data | | | | | | |
|---|----------------|----------------|---------------------------|---------------------------|-------------------------|--------------|
| Conductor cross-section Cu, Al (mm ²) | 6 - 70 | 6 - 70 | 6 - 70 | 25 - 95 | 25 - 95 | 25 - 150 |
| Nominal voltage (V) | 690 | 690 | 690 | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 270 / 270 | 270 / 270 | 270 / 270 | 320 / 320 | 320 / 320 | 285 / 230 |
| Width / Height / Length W1 / L1 (mm) | 16,2 / 30 / 37 | 16,2 / 23 / 37 | 16,2 / 30 / 38 10 / 17 | 18 / 33 / 50 / 10 / 20 | 18 / 33 / 50 10 / 20 | 23 / 38 / 60 |
| Diameter of the hole (mm) AV / AV1 | 7 / 7,5 | 7 / 7,5 | - | 9 / 10 | - | 11 / 13,5 |
| Screw, hexagonal key | No. 4 | No. 4 | No. 4 | No. 4 | No. 4 | No. 4 |
| Tightening torque (Nm) | 5,6 | 5,6 | 5,6 | 20 | 20 | 30 |
| Weight (g) | 44 | 36 | 44 | 76 | 69 | 130 |
| Package (pcs) | 30 | 30 | 30 | 15 | 15 | 15 |



OL 185



OL 240M



OL 300



OL 150-2



OL 240-2

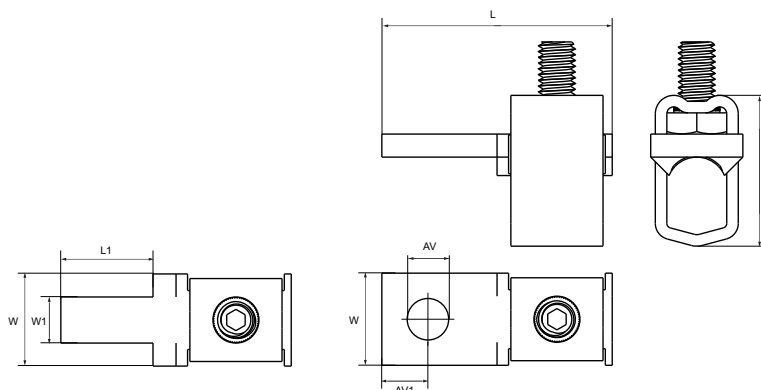


OL 300-2

| | | | | | | |
|--|------------|------------|------------|------------|------------|------------|
| | MAJ1185E10 | MAJ1240E10 | MAJ1300E10 | MAJ2150E10 | MAJ2240E10 | MAJ2300E10 |
|--|------------|------------|------------|------------|------------|------------|

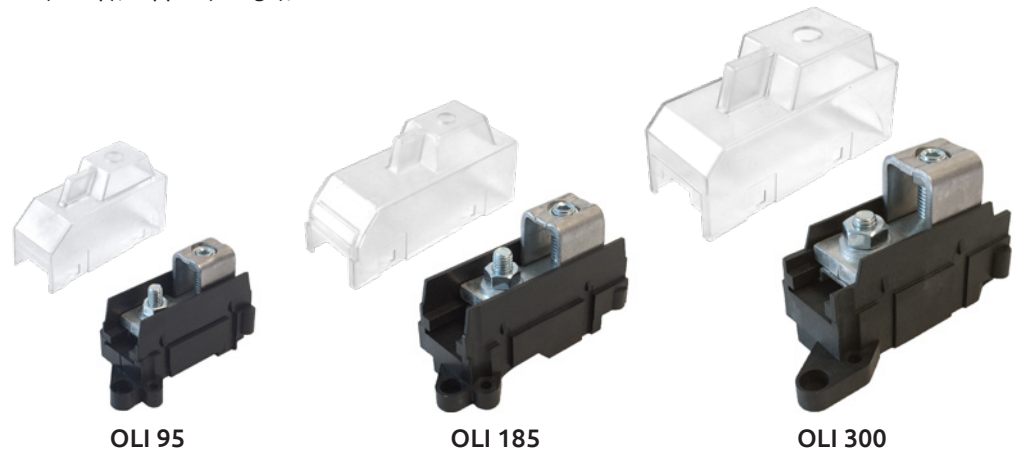
| Technical data | | | | | | |
|---|--------------|----------------|--------------|--------------|--------------|---------------|
| Conductor cross-section Cu, Al (mm ²) | 95 - 185 | 95 - 240 | 185 - 300 | 2 x 50 - 150 | 2 x 95 - 240 | 2 x 185 - 300 |
| Nominal voltage (V) | 690 | 690 | 690 | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 400 / 400 | 400 / 400 | 560 / 560 | 579 / 455 | 806 / 631 | 800 / 800 |
| Width / Height / Length | 24 / 40 / 66 | 26,3 / 40 / 61 | 32 / 52 / 76 | 25 / 64 / 59 | 30 / 78 / 60 | 38 / 91 / 85 |
| Diameter of the hole (mm) AV / AV1 | 11 / 12 | 11 / 12 | 13 / 17 | 11 / 12 | 11 / 13 | 13 / 20 |
| Screw, hexagonal key | No. 5 | No. 5 | No. 5 | No. 5 | No. 6 | No. 6 |
| Tightening torque (Nm) | 40 | 40 | 70 | 40 | 70 | 70 |
| Weight (g) | 142 | 140 | 287 | 240 | 345 | 544 |
| Package (pcs) | 15 | 15 | 3 | 3 | 3 | 3 |

Dimensions



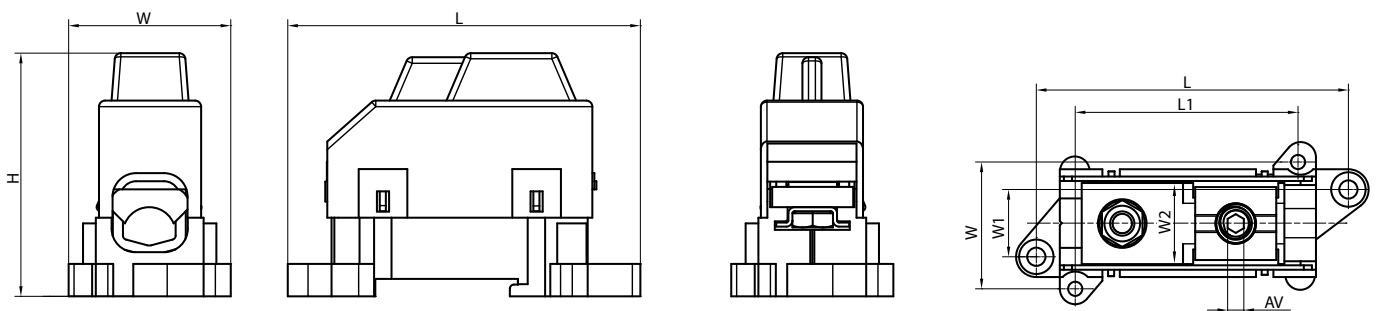
Insulated universal connectors OLI are intended for connecting copper and aluminium conductors in nominal cross-section from 25 to 300 mm². Connectors are designed for connecting copper or aluminium cables with flexible busbars or with cables with lug. Individual parts are made of stainless steel (clamp), copper (bridge),

steel (screw) and plastic (housing). These connectors are heavy duty. Clamping them with stranded conductors does not require modification of wire ends (clamping surface of terminal, not flat screw spot). IP protection class for OLI terminals is IP20.



| | MAJ1095S10 | MAJ1185S10 | MAJ1300S10 |
|--|--------------------------------|-----------------------------------|---------------------------------|
| Technical data | | | |
| Conductor cross-section Cu / Al (mm ²) | 25 - 95 | 95 - 185 | 185 - 300 |
| Nominal voltage (V) | 690 | 690 | 690 |
| Nominal current (A) | 320 | 400 | 560 |
| Width / Height / Length (mm) L1 / W1 / W2 | 40 / 60 / 87 55 / 16,6 / 20 | 49 / 67 / 113 76,9 / 21,4 / 25 | 57 / 88 / 143 86,5 / 25 / 32 |
| Screw, hexagonal key (AV) | SW 4 | SW 5 | SW 6 |
| Tightening torque (Nm) | 20 | 40 | 70 |
| Mounting | Screw | Screw | Screw |
| Weight (g) | 119 | 237 | 444 |
| Package (pcs) | 12 | 10 | 8 |

Dimensions



Universal connectors OT are used to connect copper and aluminium conductors to the busbar. Connectors enable to connect one or two conductors. The clamp body and tightening screws are made of a special aluminium alloy and galvanized by Sn.

Screw contact surfaces are coated with the contact paste for better conductivity. The contact surface is provided with grooves, which avoid loosening the wire.



OT 50



OT 95



OT 120

| | | | |
|--|------------|------------|------------|
| | MAC1050E10 | MAC1095E10 | MAC1120E10 |
|--|------------|------------|------------|

| Technical data | | | |
|---|--|--|--|
| Conductor cross-section Cu, Al (mm ²) | 1,5 - 50 | 6 - 95 | 16 - 120 |
| Nominal voltage (V) | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 160 / 145 | 245 / 220 | 280 / 230 |
| Width / Height / Length (mm) | 14 / 21,5 / 35 | 20 / 30 / 46 | 25 / 35 / 64 |
| Diameter of the hole (mm) AV / AV1 | 8,5 / 10,5 | 10,5 / 13 | 12,5 / 17 |
| Screw, hexagonal key | No. 5 | No. 6 | No. 6 |
| Tightening torque (Nm) | 3,5 Nm (1,5 - 10 mm ²) 12 Nm (16 - 50 mm ²) | 12 Nm (16 - 35 mm ²) 22 Nm (50 - 95 mm ²) | 12 Nm (6 - 35 mm ²) 25 Nm (50 - 120 mm ²) |
| Weight (g) | 10 | 22 | 50 |
| Package (pcs) | 30 | 30 | 30 |



OT 150



OT 240

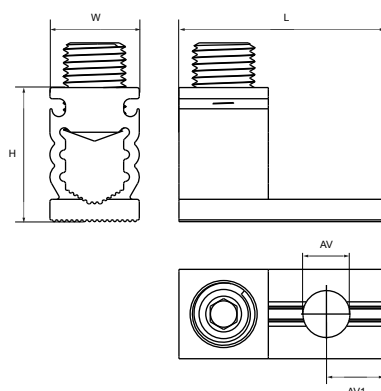


OT 300

| | | | |
|--|------------|------------|------------|
| | MAC1150E10 | MAC1240E10 | MAC1300E10 |
|--|------------|------------|------------|

| Technical data | | | |
|---|--|---|---|
| Conductor cross-section Cu, Al (mm ²) | 25 - 150 | 35 - 240 | 95 - 300 |
| Nominal voltage (V) | 690 | 690 | 690 |
| Nominal current Cu / Al (A) | 320 / 290 | 425 / 380 | 490 / 420 |
| Width / Height / Length (mm) | 26 / 39 / 62 | 32 / 44 / 74 | 40 / 48 / 64 |
| Diameter of the hole (mm) AV / AV1 | 12,5 / 15 | 12,5 / 15 | 12,5 / 18 |
| Screw, hexagonal key | No. 6 | No. 8 | No. 8 |
| Tightening torque (Nm) | 14 Nm (25 - 150 mm ²) 30 Nm (70 - 150 mm ²) | 26 Nm (35 - 120 mm ²) 40 Nm (150 - 240 mm ²) | 33 Nm (95 - 185 mm ²) 60 Nm (240 - 300 mm ²) |
| Weight (g) | 58 | 115 | 134 |
| Package (pcs) | 20 | 10 | 10 |

Dimensions



Universal connectors OTH

| Al/Cu

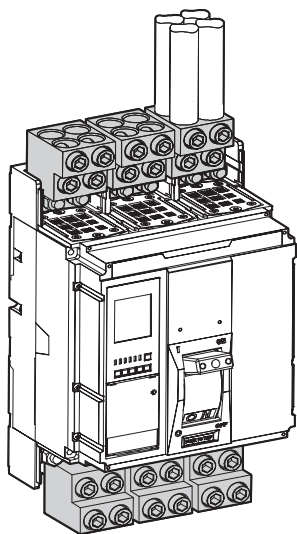
Up to

4x240 mm²

or

3x300 mm²





Universal connectors OTH are used to connect copper and aluminium wires to directly to switchgear devices. These OTH device connectors enable to connect two, three or four wires up to 300 mm² to a single connection point of a device without using cable lugs. Their compact economic design is characterized by small size and easy installation.



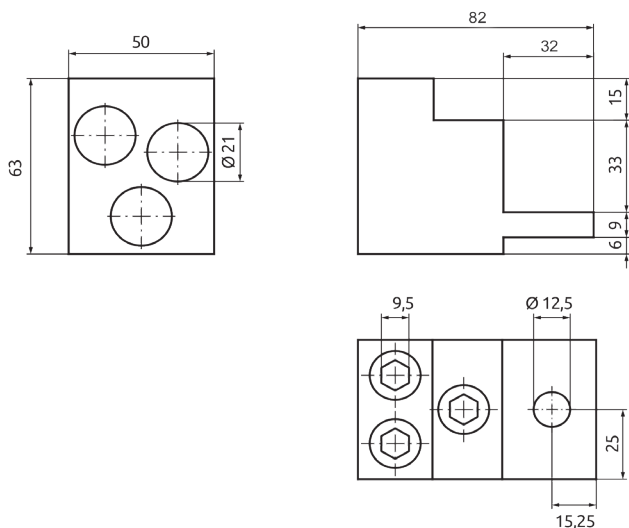
OTH 240-3

OTH 240-4

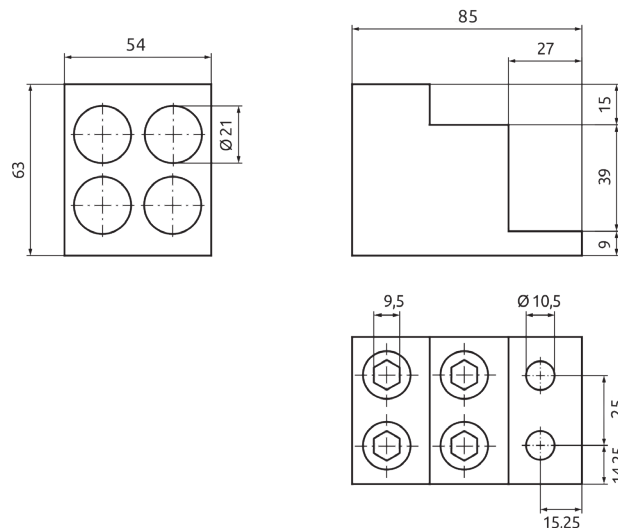
| | MAC3240A14 | MAC4240A14 |
|---|--------------|--------------|
| Technical data | | |
| Conductor cross-section Cu, Al (mm ²) | 3 x 85 - 240 | 4 x 85 - 240 |
| Nominal voltage (V) | 690 | 690 |
| Nominal current (A) | 800 | 1250 |
| Width / Height / Length (mm) | 50 / 63 / 82 | 54 / 63 / 86 |
| Number of mounting holes | 1 | 2 |
| Diameter connecting hole (mm) | 12,5 | 10,5 |
| Screw, hexagonal key | 9,5 mm | 9,5 mm |
| The length of the uninsulated conductor (mm) | 25 / 48 | 25 / 55 |
| Tightening torque (Nm) | 42 | 55 |
| Weight (g) | 310 | 344 |
| Package (pcs) | 3 | 3 |

Dimensions

OTH 240-3



OTH 240-4





OTH 300-2



OTH 300-3

| | | |
|--|------------|------------|
| | MAC2300A14 | MAC3300A14 |
|--|------------|------------|

| Technical data | | |
|---|----------------------------|----------------------------|
| Conductor cross-section Cu, Al (mm ²) | 2 x 70 – 300 + 1 x 1.5 – 4 | 3 x 70 – 300 + 1 x 1.5 – 4 |
| Nominal voltage (V) | 1000 | 1000 |
| Nominal current (A) | 800 | 1250 |
| Width / Height / Length (mm) | 30 / 63 / 94 | 54 / 63 / 94 |
| Number of mounting holes | 1 | 2 |
| Diameter connecting hole (mm) | 12.5 | 11.5 |
| Screw, hexagonal key | No. 10 | No. 10 |
| The length of the uninsulated conductor (mm) | 27 / 56 | 27 / 56 |
| Tightening torque (Nm) | 45 | 45 |
| Weight (g) | 200 | 400 |
| Package (pcs) | 3 | 2 |

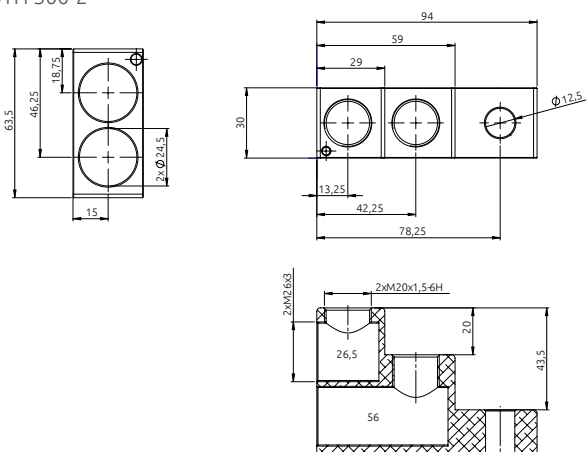
| Compatibility | | |
|---|-----|-----|
| ABB Emax E 1.2 F up to 1600A, Tmax T7 F up to 1600A | No | Yes |
| ABB Tmax T6 F up to 1000A, Tmax T5 (XT5) up to 630A | Yes | No |
| Schneider NS630b up to 1600A | No | Yes |
| Schneider NSX400-630 | Yes | No |
| Eaton NZML4-VE1250, NZM4-XKA up to 1250 | No | Yes |
| Eaton NZMS2-4-VE250, NZMH3-4-VE630 | Yes | No |
| Siemens 3VA66 1000A, 3VA271 1250-1600A | No | Yes |
| Siemens 3VA5 630A | Yes | No |
| LS TS630, TS800 | Yes | No |
| Chint NM8N-1600A | No | Yes |
| Chint NM8N up to 630A | Yes | No |

Contact us if you have further questions about compatibility!

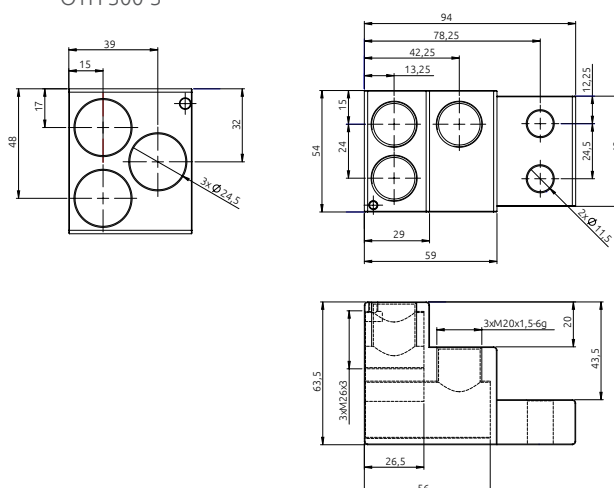
NB! In order to use 300 mm² cables with OTH300 connectors, you need to use shorter screws. Please notify us about it during the purchase and we will supply the screws with your order.

Dimensions

OTH 300-2



OTH 300-3

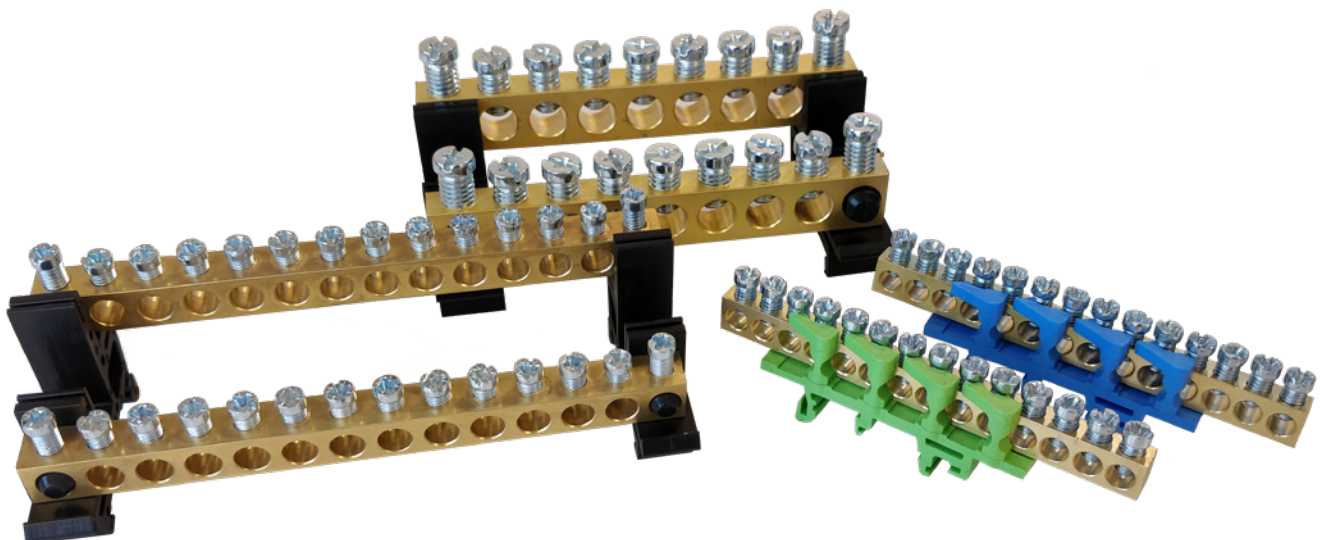


Terminals BB

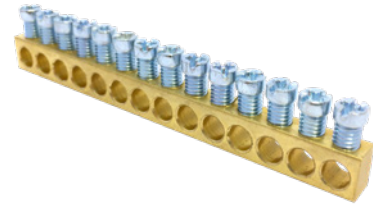
Customized terminal solutions

Up to **35 mm²**

Horizontal and vertical mounting



The BB-series of terminals are made for customers who prefer flexibility of connections within their projects. The terminal bars can be cut to size and mounted using the special terminal holders. The conductive part of the terminals is made of brass, the connecting parts are made of Zn galvanized steel. The terminal bars are available in different sizes, for cross-sections of up to 35 mm², covering even the more demanding projects.



| Order code | Type | Number of connections | Conductor cross section Cu (mm ²) | Nominal current (A) | Dimensions (mm) W / H / L | Weight (g) | Compatible with | Package (pcs) |
|------------|----------|-----------------------|---|---------------------|---------------------------|------------|-----------------|---------------|
| MAD0007E21 | BB7 | 7 | 1,5 - 16 | 63 | 6,5 / 9 / 47 | 22 | BB1, BB3 | 100 |
| MAD0009E21 | BB9 | 9 | 1,5 - 16 | 63 | 6,5 / 9 / 61 | 28 | BB1, BB3 | 70 |
| MAD0014E21 | BB14 | 14 | 1,5 - 16 | 63 | 6,5 / 9 / 94 | 42 | BB1, BB3 | 50 |
| MAD0024E21 | BB24 | 24 | 1,5 - 16 | 63 | 6,5 / 9 / 160 | 72 | BB1, BB3 | 30 |
| MAD0032E21 | BB32 | 32 | 1,5 - 16 | 63 | 6,5 / 9 / 213 | 96 | BB1, BB3 | 20 |
| MAD0042E21 | BB42 | 42 | 1,5 - 16 | 63 | 6,5 / 9 / 279 | 123 | BB1, BB3 | 20 |
| MAD0052E21 | BB52 | 52 | 1,5 - 16 | 63 | 6,5 / 9 / 345 | 152 | BB1, BB3 | 20 |
| MAD0147E21 | BB147 | 147 | 1,5 - 16 | 63 | 6,5 / 9 / 972 | 436 | BB1, BB3 | 30 |
| MAD0142E21 | BB142-10 | 142 | 1,5 - 16 | 63 | 8 / 10 / 1000 | 553 | BB3 | 25 |
| MAD0111E21 | BB111 | 111 | 1,5 - 25 | 100 | 10 / 10 / 998 | 625 | BB3 | 25 |
| MAD0083E21 | BB83 | 83 | 1,5 - 35 | 160 | 10 / 15 / 995 | 1088 | BB4 | 15 |

Terminals MPIN

MPIN terminals for residual current devices are a simple way to add additional connection points to RCD's neutral output without needing a separate neutral bar in the switchboard, saving the

much-needed space in the enclosure. The MPIN terminals come in 2 models, allowing the connection of 3x16 mm² or 6x16 mm² conductors to a single terminal.



MPIN 3



MPIN 6

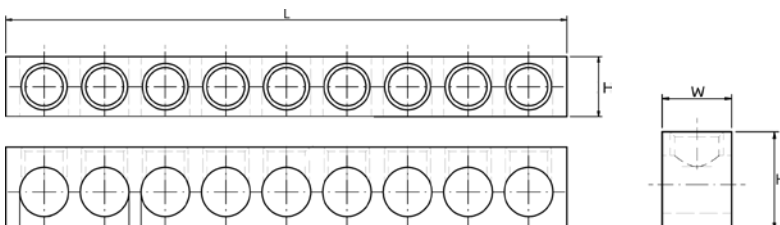
| | MAD3016E21 | MAD6016E21 |
|--|------------|------------|
|--|------------|------------|

| Technical data | | |
|---|----------------------|----------------------|
| Conductor cross section Cu (mm ²) | 1,5-16 | 1,5-16 |
| Nominal voltage (V) | 690 | 690 |
| Nominal current (A) | 63 | 63 |
| The number of connection points | 3x16 mm ² | 6x16 mm ² |
| Width / Height / Length (mm) | 8 / 16 / 35 | 16 / 16 / 33 |
| Tightening torque (Nm) | 2,5 | 2,5 |
| Weight (g) | 10 | 18 |
| Package (pcs) | 200 | 100 |

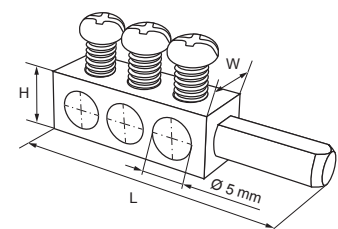


Dimensions

Terminals BB

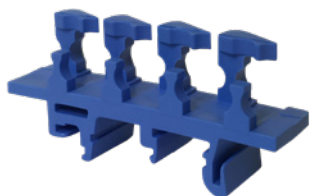


Terminals MPIN



Terminal bar holders for BB terminals allow mounting the terminals on DIN-rails, horizontally or vertically. Thanks to innovative design it is easy to place or replace brass bar terminals in accordance to your own needs, giving you a wide range of connection possibilities. Holders are made of polyamide and offered in 3 colors. BB1 holders

are for mounting single terminal bars vertically. BB0, BB3 and BB4 holders allow you to mount two terminal bars horizontally. Additionally, BB4 holder allows using 3x10 mm copper busbars with or instead of BB terminals.



BB1



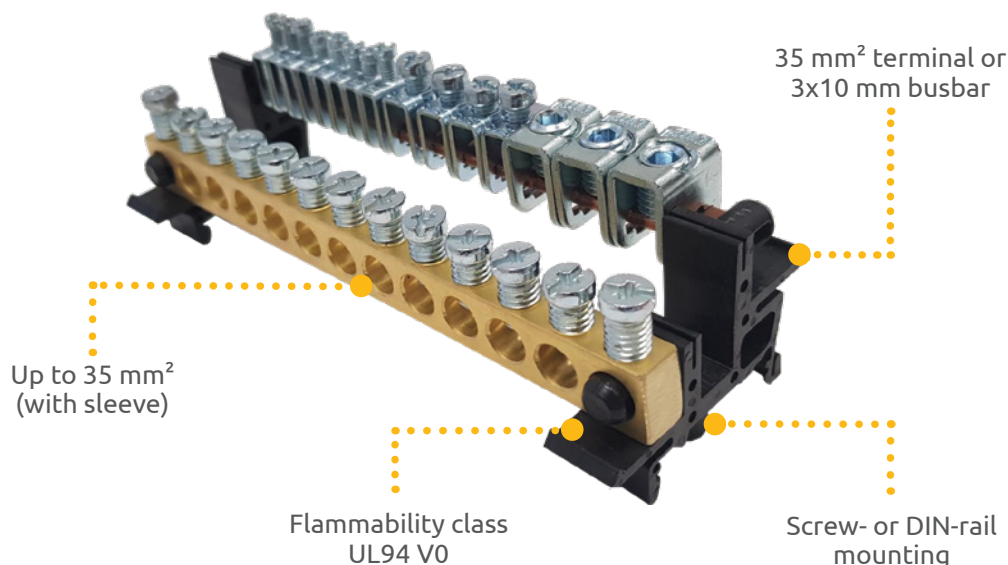
BB3



BB4

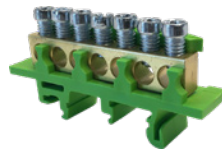
| Order code | Type | Color | Dimensions W/H/L (mm) | Weight (g) | Compatible with terminal | Package (pcs) |
|------------|------|---------|-----------------------|------------|---|---------------|
| MAD0001B21 | BB1 | Black ● | 13 / 25 / 60 | 6 | 16 mm ² (except BB142) | 50 |
| MAD0001N21 | BB1 | Blue ● | 13 / 25 / 60 | 6 | 16 mm ² (except BB142) | 50 |
| MAD0001G21 | BB1 | Green ● | 13 / 25 / 60 | 6 | 16 mm ² (except BB142) | 50 |
| MAD2003A21 | BB3 | Black ● | 12 / 41,5 / 56 | 8 | 16 mm ² / 25 mm ² | 50 |
| MAD2004B21 | BB4 | Black ● | 15 / 40 / 60 | 10 | 35 mm ² , 3x10 mm | 50 |

Terminal BB4 holders

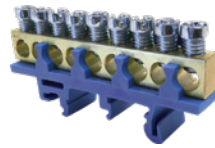


Terminals NPE (bridges) can be mounted on DIN rail crosswise. The bridges of the holders are made of highly thermally and mechanically resistant fire-retardant material. These bridges have

IP00 and are intended for location under cover. They are offered in three color variations.



A7, N7 , PE7



A9, N9 , PE9



A14, N14 , PE14

| | | | | |
|-------|---|------------|------------|------------|
| Black | ● | MAD0007B00 | MAD0009B00 | MAD0014B00 |
| Blue | ● | MAD0007N00 | MAD0009N00 | MAD0014N00 |
| Green | ● | MAD0007G00 | MAD0009G00 | MAD0014G00 |

Technical data

| | A7, N7, PE7 | A9, N9, PE9 | A14, N14, PE14 |
|---|--------------|--------------|----------------|
| Conductor cross section Cu (mm ²) | 1,5 - 16 | 1,5 - 16 | 1,5 - 16 |
| Nominal voltage (V) | 690 | 690 | 690 |
| Nominal current (A) | 63 | 63 | 63 |
| The number of connection points | 7 | 9 | 14 |
| Tightening torque (Nm) | 2,5 | 2,5 | 2,5 |
| Width / Height / Length (mm) | 13 / 30 / 60 | 13 / 30 / 61 | 13 / 30 / 94 |
| Mounting | Din rail | Din rail | Din rail |
| Weight (g) | 28 | 32 | 48 |
| Package (pcs) | 20 | 20 | 20 |

Terminals MSET

Terminals MSET are ready-to-use solutions for the customers who would like to save their own production time. The conductive part is made of brass, the connecting parts are made of steel, Zn galvanized.

| Order code | Type | Number of connections | Dimensions (mm) W / H / L | Weight (g) | Package (pcs) |
|------------|---------|-----------------------|---------------------------|------------|---------------|
| MAD2007B21 | MSET 7 | 7x2 | 40 / 40 / 50 | 54 | 10 |
| MAD2009B21 | MSET 9 | 9x2 | 40 / 40 / 64 | 68 | 10 |
| MAD2014B21 | MSET 14 | 14x2 | 40 / 40 / 97 | 96 | 10 |
| MAD2024B21 | MSET 24 | 24x2 | 40 / 40 / 163 | 156 | 10 |
| MAD2032B21 | MSET 32 | 32x2 | 40 / 40 / 216 | 202 | 10 |
| MAD2042B21 | MSET 42 | 42x2 | 40 / 40 / 282 | 258 | 10 |
| MAD2052B21 | MSET 52 | 52x2 | 40 / 40 / 348 | 316 | 10 |



Technical data

| | |
|---|----------|
| Conductor cross section Cu (mm ²) | 1,5 - 16 |
| Nominal voltage (V) | 690 |
| Nominal current (A) | 63 |
| Tightening torque (Nm) | 2,5 |
| Mounting | DIN rail |

Terminals NPE (bridges) can be mounted on DIN rail crosswise. The bridges of the holders are made of highly thermally and mechanically resistant fire-retardant material.

These bridges have IP20 protection class. They are offered in three color variations.



**A7H,
N7H , PE7H**

**A12H,
N12H, PE12H**

**A15H,
N15H, PE15H**

**A6H-2,
N6H-2, PE6H-2**

| | | | | | |
|-------|---|------------|------------|------------|------------|
| Grey | ● | MAD1007A15 | MAD1012A15 | MAD1015A15 | MAD2006A15 |
| Blue | ● | MAD1007N15 | MAD1012N15 | MAD1015N15 | MAD2006N15 |
| Green | ● | MAD1007G15 | MAD1012G15 | MAD1015G15 | MAD2006G15 |

Technical data

| | | | | |
|---|--------------|--------------|---------------|----------------------------|
| Conductor cross section Cu (mm ²) | 1,5 - 16 | 1,5 - 16 | 1,5 - 16 | 8 x 2,5 - 16 4 x 4 - 25 |
| Nominal voltage (V) | 690 | 690 | 690 | 500 |
| Nominal current (A) | 63 | 63 | 63 | 63 |
| The number of connection points | 7 | 12 | 15 | 2 x 6 |
| Tightening torque (Nm) | 2 | 2 | 2 | 2 |
| Width / Height / Length (mm) | 13 / 27 / 53 | 13 / 27 / 87 | 13 / 27 / 106 | 30 / 27 / 53 |
| Mounting | DIN rail | DIN rail | DIN rail | DIN rail |
| Weight (g) | 28 | 45 | 57 | 88 |
| Package (pcs) | 10 | 10 | 10 | 10 |

Distribution terminals MAG

Distribution terminals MAG 25 is designed to connect copper cables in the range of 2,5 to 25 mm². Universal quick-mounting unit for horizontal and vertical mounting for 35 mm mounting

rails. Contacts are made of MS 58, contact screws are made of zinc-plated steel. IP protection class for MAG 25 terminals is IP20.



MAG 25-2 grey



MAG 25-2 blue



MAG 25-2 green

| | | | | |
|-------|---|------------|------------|------------|
| Grey | ● | MAG1250A32 | - | - |
| Blue | ● | - | MAG1250B32 | - |
| Green | ● | - | - | MAG1250G32 |

Technical data

| | | | |
|---|------------------|------------------|------------------|
| Conductor cross-section Cu (mm ²) | 4 x 2,5 - 25 | 4 x 2,5 - 25 | 4 x 2,5 - 25 |
| Nominal voltage (V) | 400 | 400 | 400 |
| Nominal current (A) | 80 | 80 | 80 |
| Width / Length / Height (mm) | 26 / 50,5 / 31,5 | 26 / 50,5 / 31,5 | 26 / 50,5 / 31,5 |
| Screw | Pozidriv | Pozidriv | Pozidriv |
| Tightening torque (Nm) | 2,5 | 2,5 | 2,5 |
| Mounting | DIN rail | DIN rail | DIN rail |
| Weight (g) | 60 | 60 | 60 |
| Package (pcs) | 4 | 4 | 4 |

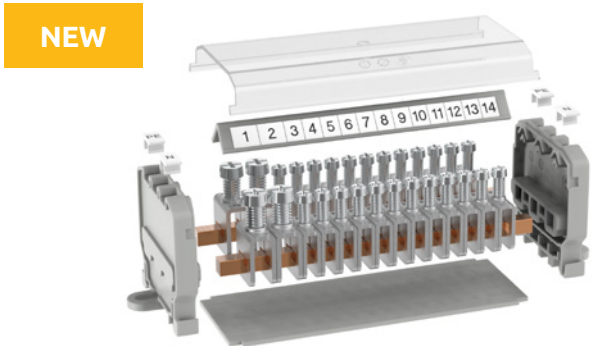
Modular N/PE-busbars are used in switchgears and other systems to ensure safe and reliable connection for neutral and safety grounding. Construction of busbar system is modular and allows a possibility to order special configurations according to clients needs.

Advantages

- Needed configuration is easily assembled with high quality components
- Suitable for variety of conductors from 0,75 mm² to 35 mm²
- Suitable for variety of copper busbars 5x5 mm; 6x6 mm; 3x10 mm
- Easy accessible for marking

Technical specifications

- Busbar Din-rail adapters are applicable with busbar sizes 5x5 mm; 6x6 mm; 3x10 mm and made of grey nylon
- Copper busbars come in different lengths and have serrations to ensure best connection
- Modular connectors of nominal voltage of 600V for the conductor cross-sections from 0,75 to 35 mm²



Modular connectors



MAM 6



MAM 16



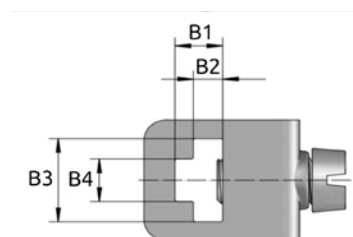
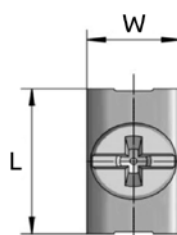
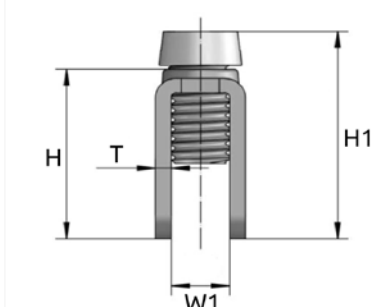
MAM 35

| | MAM5506E10 | MAM6606E10 | MAM5516E10 | MAM6616E10 | MAM5535E10 | MAM6635E10 |
|--|------------|------------|------------|------------|------------|------------|
|--|------------|------------|------------|------------|------------|------------|

Technical data

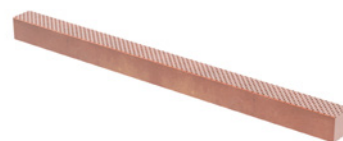
| | | | | | | |
|-------------------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|
| Cross-section Cu (mm ²) | 0,75 - 6 | 0,75 - 6 | 0,75 - 16 | 0,75 - 16 | 2,5 - 35 | 2,5 - 35 |
| Busbar (mm) | 5 x 5, 3 x 10 | 6 x 6, 3 x 10 | 5 x 5, 3 x 10 | 6 x 6, 3 x 10 | 5 x 5, 3 x 10 | 6 x 6, 3 x 10 |
| Nominal voltage AC/DC (V) | 600 | 600 | 600 | 600 | 600 | 600 |
| Nominal current (A) | 33 | 33 | 82 | 82 | 135 | 135 |
| Screw | Pozidriv | Pozidriv | Pozidriv | Pozidriv | Hex | Hex |
| Tightening torque (Nm) | 1.2 | 1.2 | 2.5 | 2.5 | 4 | 4 |
| Dimensions W / H / L (mm) | 5,9 / 17 / 14,8 | 5,9 / 17 / 14,8 | 8,5 / 18 / 14,8 | 8,5 / 18 / 14,8 | 12,6 / 20,6 / 17,8 | 12,6 / 20,6 / 17,8 |
| Dimensions W1 / H1 / T (mm) | 3,4 / 20,2 - 26,7 / 1,25 | 3,4 / 20,2 - 26,7 / 1,25 | 5,5 / 22 - 29,1 / 1,5 | 5,5 / 22 - 29,1 / 1,5 | 9 / 20,6 - 26,4 / 1,8 | 9 / 20,6 - 26,4 / 1,8 |
| Dimensions B1 / B2 / B3 / B4 (mm) | 5,2 / 3,2 / 10,2 / 5,2 | 6,2 / 3,2 / 10,2 / 6,2 | 5,2 / 3,2 / 10,2 / 5,2 | 6,2 / 3,2 / 10,2 / 6,2 | 5,2 / 3,2 / 10,2 / 5,2 | 6,2 / 3,2 / 10,2 / 6,2 |
| Weight (g) | 5 | 5 | 6.5 | 8 | 14 | 14 |
| Package (pcs) | 500 | 500 | 500 | 500 | 500 | 500 |

Dimensions



Copper busbars

| Length (mm) | Package (pcs) | 5x5 mm | 6x6 mm | 3x10 mm |
|-------------|---------------|------------|------------|------------|
| 59,3 | 50 | MAM550060C | MAM660060C | MAM310060C |
| 76,5 | 40 | MAM550076C | MAM660076C | MAM310076C |
| 105,7 | 40 | MAM550106C | MAM660106C | MAM310106C |
| 165,5 | 30 | MAM550166C | MAM660166C | MAM310166C |
| 225,5 | 20 | MAM550226C | MAM660226C | MAM310226C |
| 1000 | 10 | MAM551000C | MAM661000C | MAM311000C |



Busbar Din-rail adapters

| Order code | Type (mm) | Weight (g) | Package (pcs) |
|------------|-----------|------------|---------------|
| MAM5500ABA | 5x5 | 17 | 100 |
| MAM6600ABA | 6x6 | 18 | 100 |
| MAM3100ABA | 3x10 | 17 | 100 |



Marking supports

| Order code | Length (mm) | Weight (g) | Package (pcs) |
|------------|-------------|------------|---------------|
| MAM0050AMS | 50 | 1 | 25 |
| MAM0067AMS | 67 | 2 | 20 |
| MAM0096AMS | 97 | 3 | 20 |
| MAM0156AMS | 156 | 5 | 15 |
| MAM0216AMS | 216 | 7 | 10 |



Finger shields

| Order code | Length (mm) | Weight (g) | Package (pcs) |
|------------|-------------|------------|---------------|
| MAM0054AFS | 54 | 6 | 25 |
| MAM0071AFS | 71 | 8 | 20 |
| MAM0100AFS | 100 | 11 | 20 |
| MAM0160AFS | 160 | 18 | 15 |
| MAM0220AFS | 220 | 28 | 10 |

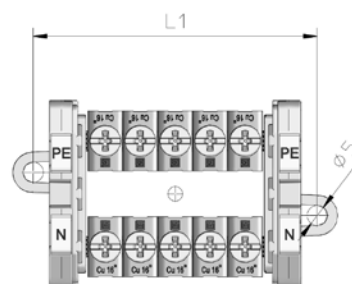
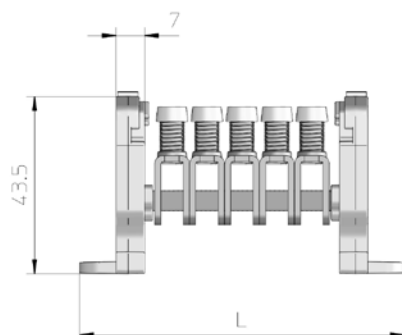
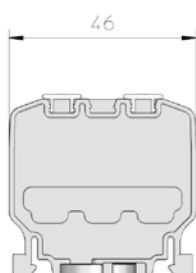


Marking labels

| Order code | Type | Weight (g) | Package (pcs) |
|------------|----------------------------------|------------|---------------|
| MAM0625LBL | No. 1 - 25 for MAM 6 connector | 3 | Qty by order |
| MAM0650LBL | No. 26 - 50 for MAM 6 connector | 3 | Qty by order |
| MAM1616LBL | No. 1 - 16 for MAM 16 connector | 3 | Qty by order |
| MAM1632LBL | No. 17 - 32 for MAM 16 connector | 3 | Qty by order |
| MAM3510LBL | No. 1 - 10 for MAM 35 connector | 3 | Qty by order |



Dimensions



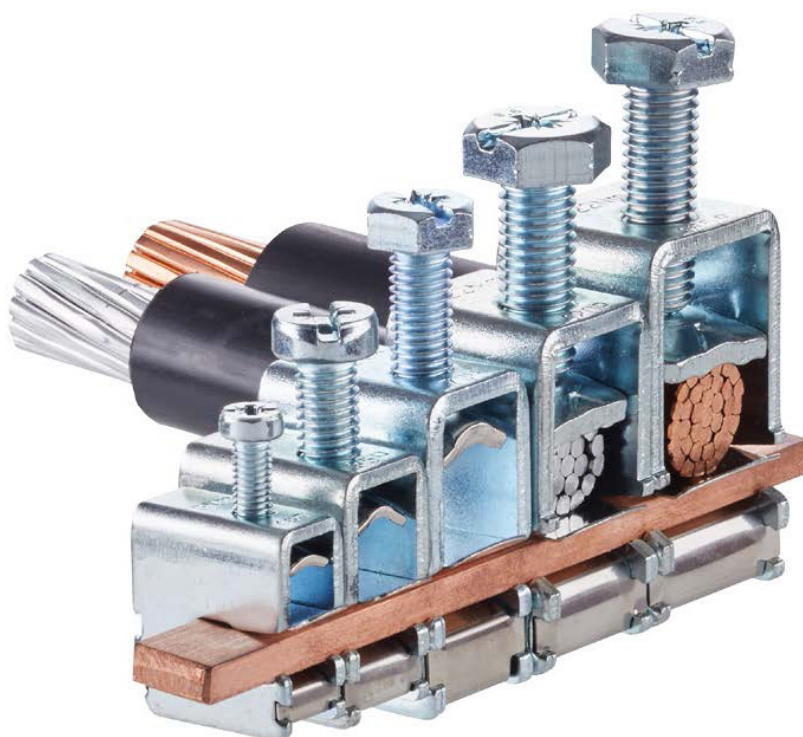
Bow terminals

Simple installation

Suitable for

cables and
flexible busbars

Bimetallic versions available



Bow terminals MAE-E are designed for mounting on copper busbar with thickness of 5 or 10 mm, enabling fastening wires up to 185 mm² according to different types or up to 10x20 mm Moflex flexible busbars. Body and screw of terminals are made of steel (class 11) and galvanized by Zn. The pressure spring is made of stainless steel. Hexagonal head in terminals (except MAE 16E) enables to tighten screws using hexagonal key with slotted blade or Phillips screwdriver.

Advantages

- Quick and easy installation
- Ideal for on-site modifications
- Allows for excellent electrical contact
- Terminal has visible indication of tightening torque
- Suitable to connect wires up to 185 mm² according to different types
- Suitable to connect up to 10x20 mm Moflex flexible busbars to copper busbar

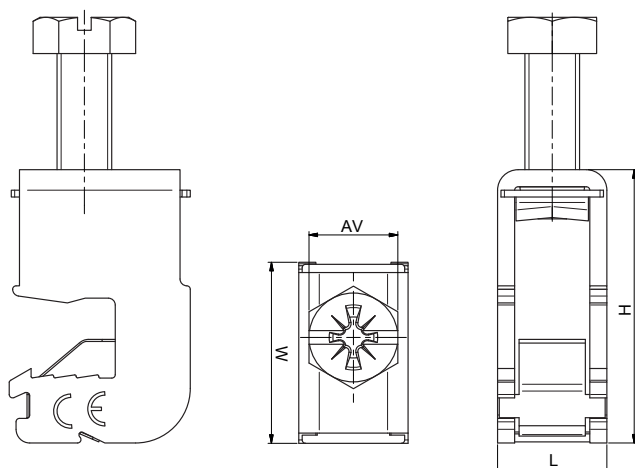


| Mounting | MAE 16E | MAE 35E | MAE 50E | MAE 70E | MAE 120E | MAE 185E |
|-----------|------------|------------|------------|------------|------------|------------|
| 5 mm bar | MAE0165E15 | MAE0355E15 | MAE0505E15 | MAE0705E15 | MAE1205E15 | MAE1855E15 |
| 10 mm bar | MAE0161E15 | MAE0351E15 | MAE0501E15 | MAE0701E15 | MAE1201E15 | MAE1851E15 |

Technical data

| | | | | | | |
|---|------------------------------------|--|--------------------------------------|----------------------------------|----------------------------------|------------------------------|
| Cross-section Cu (mm ²) | 1,5 - 16 | 4 - 35 | 10 - 50 | 16 - 70 | 16 - 120 | 50 - 185 |
| Flexible busbar max. width (mm) | - | 9 | 9 | 9 | 15,5 | 20 |
| Flexible busbar max. layers | - | 6 | 6 | 6 | 10 | 10 |
| Nominal voltage AC/DC (V) | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Nominal current (A) | 180 | 270 | 315 | 400 | 440 | 500 |
| Width / Height / Length (mm) Cu bar (th. 5 mm) Cu bar (th. 10 mm) | 25,5 / 26,5 / 12 25,5 / 29 / 12 | 26,5 / 31,3 / 16,5 26,5 / 36,5 / 16,5 | 26,5 / 35 / 16,5 26,5 / 40 / 16,5 | 28 / 39 / 20,5 28 / 46 / 20,5 | 29 / 46 / 23,5 29 / 52 / 23,5 | 29 / 55 / 35 29 / 55 / 35 |
| Screw / hexagonal key (AV) | Pz2 | Pz3 / SW13 | Pz3 / SW13 | Pz3 / SW13 | Pz3 / SW17 | Pz3 / SW17 |
| Tightening torque (Nm) | 3 | 6 | 8 | 8 | 20 | 20 |
| Weight (g) Cu bar (th. 5 mm) Cu bar (th. 10 mm) | 22 21 | 44 45 | 48 48 | 62 68 | 88 90 | 102 96 |
| Package (pcs) | 40 | 20 | 20 | 10 | 10 | 10 |

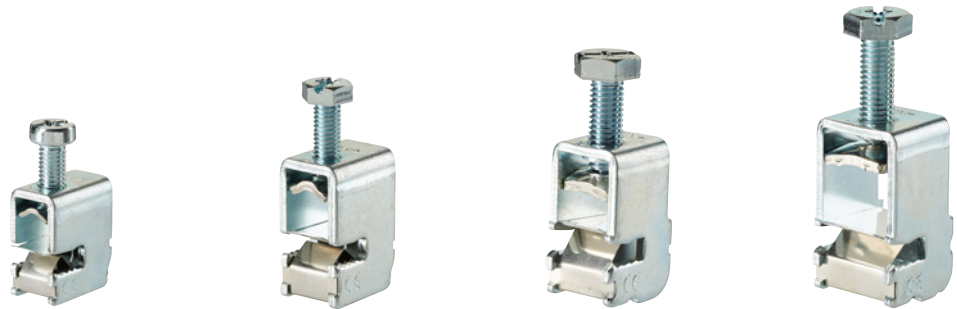
Dimensions



Bimetal bow terminals MAE-H are designed for mounting on copper or aluminium busbar with thickness of 5 or 10 mm, enabling fastening copper and aluminium wires up to 185 mm² or up to 10x20mm Moflex flexible busbars. Terminals have bimetal plate between busbar and cable connection. Body and screw of terminals are made of steel (class 11) and galvanized by Zn. The pressure spring is made of stainless steel and separating plate - of phosphorus bronze. Hexagonal head in terminals (except MAE 35H) enables to tighten screws using hexagonal key with slotted blade or Phillips screwdriver.

Advantages

- Quick and easy installation
- Ideal for on site modifications
- Allows for excellent electrical contact
- Terminal has visible indication of tightening torque
- Suitable to connect aluminium cable to copper busbar or copper cable to aluminium busbar without additional need for TIN plated busbars
- Suitable to connect Moflex copper flexible busbar to aluminium busbar without additional need for TIN plated busbars or flexible busbars

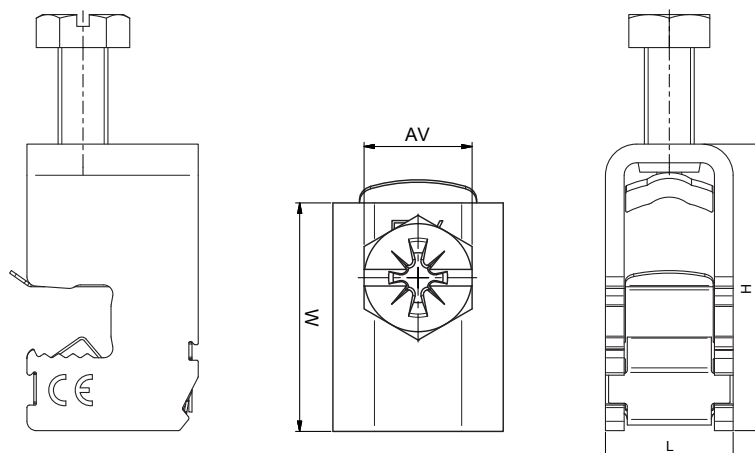


| Mounting | MAE 35H | MAE 70H | MAE 120H | MAE 185H |
|-----------|------------|------------|------------|------------|
| 5 mm bar | MAE0355H15 | MAE0705H15 | MAE1205H15 | MAE1855H15 |
| 10 mm bar | MAE0351H15 | MAE0701H15 | MAE1201H15 | MAE1851H15 |

Technical data

| | | | | |
|---|------------------|----------------|--------------|--------------|
| Cross-section Cu, Al (mm ²) | 4 - 35 | 16 - 70 | 16 - 120 | 50 - 185 |
| Flexible busbar max. width (mm) | 9 | 9 | 15,5 | 20 |
| Flexible busbar max. layers | 6 | 6 | 10 | 10 |
| Nominal voltage AC/DC (V) | 1000 | 1000 | 1000 | 1000 |
| Nominal current (A) | 270 | 400 | 440 | 500 |
| Width / Height / Length (mm) | | | | |
| 5 mm bar | 26,5 / 32 / 16,5 | 27,5 / 41 / 21 | 29 / 46 / 24 | 29 / 52 / 30 |
| 10 mm bar | 26,5 / 37 / 16,5 | 27,5 / 46 / 21 | 29 / 51 / 24 | 29 / 56 / 30 |
| Screw / hexagonal key (AV) | Pz3 / SW13 | Pz3 / SW13 | Pz3 / SW17 | Pz3 / SW17 |
| Tightening torque (Nm) | 6 | 12 | 22 | 22 |
| Weight (g) | | | | |
| 5 mm bar | 44 | 62 | 88 | 102 |
| 10 mm bar | 45 | 68 | 90 | 102 |
| Package (pcs) | 10 | 10 | 10 | 10 |

Dimensions



Grounding ball studs

**Safety
grounding**

**Tested and
certified**

in accordance with the standard

IEC/EN 61230 (5, 7)

29,6 kA/1s

Tin plated copper



Grounding ball studs are designed for short-circuiting and grounding dead parts of electrical equipment. These ball studs are made of copper and electrolytically galvanized by Sn. Products are tested and certified in accordance with standards IEC / EN 61230 (5, 7).



20 mm / M 12

25 mm / M 12

30 mm / M 12

30 mm / M 16*

| | | | | |
|--|------------|------------|------------|------------|
| | MGA2012M10 | MGA2512M10 | MGA3012M10 | MGA3016M10 |
|--|------------|------------|------------|------------|

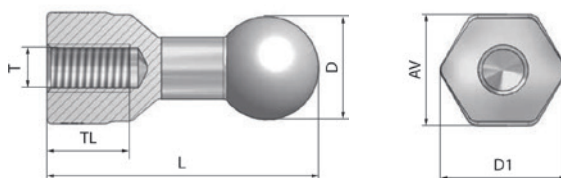
Technical data

| | | | | |
|--|----------------|----------------|----------------|----------------|
| The diameter of the spherical portion (D) (mm) | 20 | 25 | 30 | 30 |
| Length (L) (mm) | 58,6 | 65,6 | 71,1 | 91 |
| Dimensions TL / AV / D1 (mm) | 16 / 24 / 27 | 20 / 27 / 30 | 20 / 27 / 30 | 24 / 27 / 30 |
| Thread (T) | M12 (internal) | M12 (internal) | M12 (internal) | M16 (internal) |
| Max. short-circuit current | 23,7 kA/1s | 29,6 kA/1s | 29,6 kA/1s | 25 kA/1s |
| Weight (g) | 178 | 208 | 262 | 344 |
| Package (pcs) | 20 | 20 | 20 | 10 |

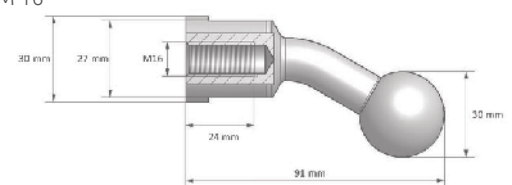
* Grounding ball stud with 30° bent

Dimensions

20 mm / M 12
25 mm / M 12
30 mm / M 12

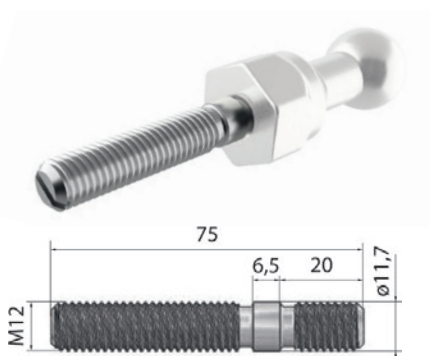


30 mm / M 16



Adapter M 12

Adapter M 12 is compatible three types of grounding ball studs at above. The adapter is made of steel and plated with zinc.



Adapter M 12

| | |
|--|------------|
| | MGA0012M10 |
|--|------------|

Technical data

| | |
|---------------|----------------|
| Length (mm) | 75 |
| Thread (T) | M12 (external) |
| Weight (g) | 53 |
| Package (pcs) | 20 |

Insulators

Low voltage insulators

Wide range of

polyester

and

polyamide

insulators

High resistance to electrical
and mechanical stress



- Polyester resin with 20% fiberglass
- Zinc-plated steel - threaded inserts

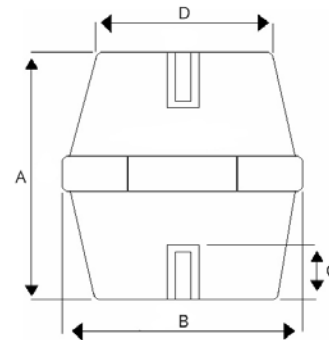
Advantages

- Excellent insulation properties
- Easy fixing thanks to hexagonal perimeter
- Application flexibility with models of different size (height and width)
- High resistance to corrosion, high temperatures and electrical / mechanical stress

Technical specifications

- Color red (RAL 3002)
- Operating temperature - 40 °C / + 130 °C
- Self-extinguishing grade UL94 - V0
- Arc resistance > 180 sec. (according to ASTM D-495)

Products displayed here contain only selection of the range offered. Ask for availability of other dimensions and brass inserts from us!



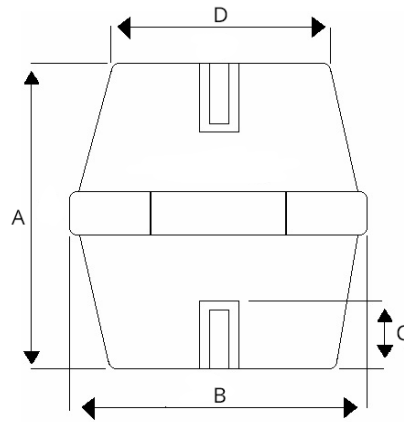
| Order code | Dimensions (mm) | | | | Mechanical characteristics | | | | Electrical characteristics | | | Package | |
|------------|-----------------|--------|----|----|----------------------------|------------|------------|------------|----------------------------|--|---------------------------|-----------------------------|-------|
| | A | B | C | D | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) | Rated voltage at 50Hz for 60 sec. (kV) | Flashover voltage (kV AC) | Operating Voltage DC/AC (V) | (pcs) |
| MID2505H19 | 25 | HEX 19 | 8 | 15 | M5 | 400 | 2300 | 220 | 6 | 8 | 25 | 600 | 50 |
| MID2506H19 | 25 | HEX 19 | 8 | 15 | M6 | 400 | 2300 | 220 | 10,3 | 8 | 25 | 600 | 50 |
| MID3006H30 | 30 | HEX 30 | 9 | 26 | M6 | 900 | 4900 | 450 | 10,3 | 10 | 30 | 750 | 50 |
| MID3008H30 | 30 | HEX 30 | 9 | 26 | M8 | 900 | 4900 | 450 | 25,5 | 10 | 30 | 750 | 50 |
| MID3506H32 | 35 | HEX 32 | 11 | 28 | M6 | 1100 | 7000 | 500 | 10,3 | 10 | 40 | 750 | 50 |
| MID3508H32 | 35 | HEX 32 | 11 | 28 | M8 | 1100 | 7000 | 500 | 25,5 | 10 | 40 | 750 | 50 |
| MID3510H32 | 35 | HEX 32 | 11 | 28 | M10 | 1100 | 7000 | 500 | 50 | 10 | 40 | 750 | 50 |
| MID3606H41 | 36 | HEX 41 | 11 | 33 | M6 | 1400 | 8300 | 650 | 10,3 | 12 | 40 | 1000 | 50 |
| MID3608H41 | 36 | HEX 41 | 11 | 33 | M8 | 1400 | 8300 | 650 | 25,5 | 12 | 40 | 1000 | 25 |
| MID3610H41 | 36 | HEX 41 | 11 | 33 | M10 | 1400 | 8300 | 650 | 50 | 12 | 40 | 1000 | 25 |
| MID4006H46 | 40 | HEX 46 | 15 | 40 | M6 | 1300 | 8300 | 700 | 10,3 | 12 | 40 | 1000 | 20 |
| MID4008H46 | 40 | HEX 46 | 15 | 40 | M8 | 1300 | 8300 | 700 | 25,5 | 12 | 40 | 1000 | 20 |
| MID4010H46 | 40 | HEX 46 | 15 | 40 | M10 | 1300 | 8300 | 700 | 50 | 12 | 40 | 1000 | 20 |
| MID4506O41 | 45 | OCT 41 | 15 | 33 | M6 | 1400 | 8500 | 740 | 10,3 | 15 | 40 | 1000 | 25 |
| MID4508O41 | 45 | OCT 41 | 15 | 33 | M8 | 1400 | 8500 | 740 | 25,5 | 15 | 40 | 1000 | 25 |
| MID4510O41 | 45 | OCT 41 | 15 | 33 | M10 | 1400 | 8500 | 740 | 50 | 15 | 40 | 1000 | 25 |
| MID4512O41 | 45 | OCT 41 | 15 | 33 | M12 | 1400 | 8500 | 740 | 87,2 | 15 | 40 | 1000 | 25 |
| MID4506H46 | 45 | HEX 46 | 15 | 40 | M6 | 1500 | 9000 | 750 | 10,3 | 15 | 40 | 1000 | 20 |
| MID4508H46 | 45 | HEX 46 | 15 | 40 | M8 | 1500 | 9000 | 750 | 25,5 | 15 | 40 | 1000 | 20 |
| MID4510H46 | 45 | HEX 46 | 15 | 40 | M10 | 1500 | 9000 | 750 | 50 | 15 | 40 | 1000 | 20 |
| MID5006H36 | 50 | HEX 36 | 15 | 29 | M6 | 1300 | 8000 | 650 | 10,3 | 20 | 50 | 1500 | 25 |
| MID5008H36 | 50 | HEX 36 | 15 | 29 | M8 | 1300 | 8000 | 650 | 25,5 | 20 | 50 | 1500 | 25 |
| MID5010H36 | 50 | HEX 36 | 15 | 29 | M10 | 1300 | 8000 | 650 | 50 | 20 | 50 | 1500 | 25 |
| MID5012H36 | 50 | HEX 36 | 15 | 29 | M12 | 1300 | 8000 | 650 | 87,2 | 20 | 50 | 1500 | 25 |
| MID5012H50 | 50 | HEX 50 | 15 | 42 | M12 | 1500 | 9500 | 750 | 87,2 | 20 | 50 | 1500 | 20 |
| MID6008O55 | 60 | OCT 55 | 15 | 43 | M8 | 2000 | 12500 | 800 | 25,5 | 20 | 50 | 1500 | 10 |
| MID6010O55 | 60 | OCT 55 | 15 | 43 | M10 | 2000 | 12500 | 800 | 50 | 20 | 50 | 1500 | 10 |

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

| Order code | Dimensions (mm) | | | | Mechanical characteristics | | | | Electrical characteristics | | | Package | |
|------------|-----------------|--------|----|----|----------------------------|------------|------------|------------|----------------------------|--|---------------------------|-----------------------------|-------|
| | A | B | C | D | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) | Rated voltage at 50Hz for 60 sec. (kV) | Flashover voltage (kV AC) | Operating Voltage DC/AC (V) | (pcs) |
| MID6308H41 | 63 | HEX 41 | 15 | 33 | M8 | 1600 | 9000 | 700 | 25,5 | 20 | 50 | 1500 | 20 |
| MID6310H41 | 63 | HEX 41 | 15 | 33 | M10 | 1600 | 9000 | 700 | 50 | 20 | 50 | 1500 | 20 |
| MID6312H41 | 63 | HEX 41 | 15 | 33 | M12 | 1600 | 9000 | 700 | 87,2 | 20 | 50 | 1500 | 10 |
| MID7010H65 | 70 | HEX 65 | 25 | 49 | M10 | 3000 | 15000 | 1200 | 50 | 25 | 50 | 2000 | 10 |
| MID7012H65 | 70 | HEX 65 | 25 | 49 | M12 | 3000 | 15000 | 1200 | 87,2 | 25 | 50 | 2000 | 5 |
| MID7016H65 | 70 | HEX 65 | 25 | 49 | M16 | 3000 | 15000 | 1200 | 210,8 | 25 | 50 | 2000 | 10 |
| MID7512O65 | 75 | OCT 65 | 26 | 51 | M12 | 3000 | 15000 | 1200 | 87,2 | 25 | 50 | 2000 | 5 |
| MID7508H50 | 75 | HEX 50 | 15 | 42 | M8 | 1800 | 9500 | 730 | 25,5 | 25 | 50 | 2000 | 10 |
| MID7510H50 | 75 | HEX 50 | 25 | 42 | M10 | 1800 | 9500 | 730 | 50 | 25 | 50 | 2000 | 10 |
| MID7512H50 | 75 | HEX 50 | 25 | 42 | M12 | 1800 | 9500 | 730 | 87,2 | 25 | 50 | 2000 | 10 |
| MID8012H65 | 80 | HEX 65 | 25 | 49 | M12 | 3500 | 16000 | 1300 | 87,2 | 30 | 50 | 3600 | 5 |
| MID1002O65 | 100 | OCT 65 | 25 | 51 | M12 | 4000 | 16500 | 1300 | 87,2 | 30 | 50 | 3600 | 5 |
| MID1006O65 | 100 | OCT 65 | 25 | 51 | M16 | 4000 | 16500 | 1300 | 210,8 | 30 | 50 | 3600 | 5 |

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

Dimensions



- Polyamide PA6 resin with 30% fiberglass
- Zinc-plated steel - threaded inserts

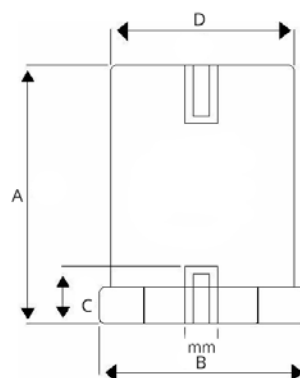
Advantages

- Excellent insulation properties
- Easy fixing thanks to hexagonal perimeter
- Application flexibility with models of different size (height and width)
- High resistance to corrosion, high temperatures and electrical / mechanical stress

Technical specifications

- Color red (RAL 3011)
- Operating temperature - 40 °C / + 120 °C
- Self-extinguishing grade UL94 - V0
- Arc resistance > 180 sec. (according to ASTM D-495)

Products displayed here contain only selection of the range offered. Ask for availability of other dimensions and brass inserts from us!



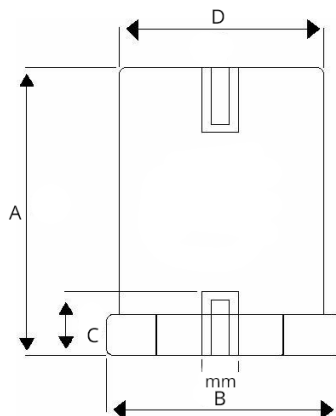
| Order code | Dimensions (mm) | | | | Mechanical characteristics | | | | Electrical characteristics | | | Package |
|--------------------------------|-----------------|--------|-----|--------|----------------------------|------------|------------|------------------------|--|---------------------------|-----------------------------|---------|
| | A | B | C | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) | Rated voltage at 50Hz for 60 sec. (kV) | Flashover voltage (kV AC) | Operating Voltage DC/AC (V) | (pcs) |
| Polyamide stud insulators D=20 | | | | | | | | | | | | |
| MIB1604D20 | 16 | HEX 20 | 4,5 | M4 | 300 | 2500 | 200 | 3 | 3 | 10 | 400 | 50 |
| MIB1605D20 | 16 | HEX 20 | 4,5 | M5 | 300 | 2500 | 200 | 3,5 | 3 | 10 | 400 | 50 |
| MIB1606D20 | 16 | HEX 20 | 4,5 | M6 | 300 | 2500 | 200 | 4 | 3 | 10 | 400 | 50 |
| MIB2005D20 | 20 | HEX 20 | 5 | M5 | 300 | 2500 | 180 | 3,5 | 3,5 | 12 | 600 | 50 |
| MIB2006D20 | 20 | HEX 20 | 5 | M6 | 300 | 2500 | 180 | 4 | 3,5 | 12 | 600 | 100 |
| MIB2505D20 | 25 | HEX 20 | 8 | M5 | 300 | 2500 | 180 | 6 | 5 | 15 | 600 | 50 |
| MIB2506D20 | 25 | HEX 20 | 8 | M6 | 300 | 2500 | 180 | 10,3 | 5 | 15 | 600 | 100 |
| MIB2508D20 | 25 | HEX 20 | 8 | M8 | 300 | 2500 | 180 | 25,5 | 5 | 15 | 600 | 100 |
| MIB3005D20 | 30 | HEX 20 | 9 | M5 | 350 | 2500 | 150 | 6 | 10 | 20 | 600 | 50 |
| MIB3006D20 | 30 | HEX 20 | 9 | M6 | 350 | 2500 | 150 | 10,3 | 10 | 20 | 600 | 100 |
| MIB3008D20 | 30 | HEX 20 | 9 | M8 | 350 | 2500 | 150 | 25,5 | 10 | 20 | 600 | 100 |
| MIB3505D20 | 35 | HEX 20 | 9 | M5 | 350 | 2500 | 150 | 6 | 10 | 20 | 600 | 100 |
| MIB3506D20 | 35 | HEX 20 | 9 | M6 | 350 | 2500 | 150 | 10,3 | 10 | 20 | 600 | 100 |
| MIB3508D20 | 35 | HEX 20 | 9 | M8 | 350 | 2500 | 150 | 25,5 | 10 | 20 | 600 | 100 |
| MIB4005D20 | 40 | HEX 20 | 9 | M5 | 350 | 2500 | 150 | 6 | 10 | 20 | 600 | 50 |
| MIB4006D20 | 40 | HEX 20 | 9 | M6 | 350 | 2500 | 150 | 10,3 | 10 | 20 | 600 | 100 |
| MIB4008D20 | 40 | HEX 20 | 9 | M8 | 350 | 2500 | 150 | 25,5 | 10 | 20 | 600 | 100 |
| MIB4505D20 | 45 | HEX 20 | 9 | M5 | 350 | 2500 | 150 | 6 | 10 | 20 | 600 | 50 |
| MIB4506D20 | 45 | HEX 20 | 9 | M6 | 350 | 2500 | 150 | 10,3 | 10 | 20 | 600 | 100 |
| MIB4508D20 | 45 | HEX 20 | 9 | M8 | 350 | 2500 | 150 | 25,5 | 10 | 20 | 600 | 50 |
| MIB5005D20 | 50 | HEX 20 | 9 | M5 | 350 | 2500 | 100 | 6 | 10 | 30 | 750 | 50 |
| MIB5006D20 | 50 | HEX 20 | 9 | M6 | 350 | 2500 | 100 | 10,3 | 10 | 30 | 750 | 50 |

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

| Order code | Dimensions (mm) | | | | Mechanical characteristics | | | | Electrical characteristics | | | Package |
|--------------------------------|-----------------|--------|----|--------|----------------------------|------------|------------|------------------------|--|-------------------------|-----------------------------|---------|
| | A | B | C | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) | Rated voltage at 50Hz for 60 sec. (kV) | Flashover voltage kV AC | Operating Voltage DC/AC (V) | (pcs) |
| Polyamide stud insulators D=30 | | | | | | | | | | | | |
| MIB3006D30 | 30 | HEX 30 | 9 | M6 | 900 | 4500 | 450 | 10,3 | 8 | 25 | 750 | 50 |
| MIB3008D30 | 30 | HEX 30 | 9 | M8 | 900 | 4500 | 450 | 25,5 | 8 | 25 | 750 | 50 |
| MIB3506D30 | 35 | HEX 30 | 11 | M6 | 900 | 4500 | 450 | 10,3 | 8 | 25 | 750 | 50 |
| MIB3508D30 | 35 | HEX 30 | 11 | M8 | 900 | 4500 | 450 | 25,5 | 8 | 25 | 750 | 50 |
| MIB4006D30 | 40 | HEX 30 | 11 | M6 | 900 | 4500 | 450 | 10,3 | 10 | 30 | 1000 | 50 |
| MIB4008D30 | 40 | HEX 30 | 11 | M8 | 900 | 4500 | 450 | 25,5 | 10 | 30 | 1000 | 50 |
| MIB4506D30 | 45 | HEX 30 | 15 | M6 | 900 | 4500 | 300 | 10,3 | 10 | 30 | 1000 | 50 |
| MIB4508D30 | 45 | HEX 30 | 15 | M8 | 900 | 4500 | 300 | 25,5 | 10 | 30 | 1000 | 25 |
| MIB5506D30 | 55 | HEX 30 | 15 | M6 | 900 | 4500 | 200 | 10,3 | 15 | 50 | 1500 | 25 |
| MIB5508D30 | 55 | HEX 30 | 15 | M8 | 900 | 4500 | 200 | 25,5 | 15 | 50 | 1500 | 25 |
| MIB6506D30 | 65 | HEX 30 | 15 | M6 | 900 | 4500 | 150 | 10,3 | 15 | 50 | 1500 | 25 |
| MIB6508D30 | 65 | HEX 30 | 15 | M8 | 900 | 4500 | 150 | 25,5 | 15 | 50 | 1500 | 25 |
| MIB7006D30 | 70 | HEX 30 | 15 | M6 | 900 | 4500 | 150 | 10,3 | 15 | 50 | 1500 | 25 |
| MIB7008D30 | 70 | HEX 30 | 15 | M8 | 900 | 4500 | 150 | 25,5 | 15 | 50 | 1500 | 25 |
| Polyamide stud insulators D=40 | | | | | | | | | | | | |
| MIB3008D40 | 30 | HEX 41 | 9 | M8 | 1200 | 6500 | 700 | 25,5 | 8 | 25 | 750 | 50 |
| MIB3508D40 | 35 | HEX 41 | 11 | M8 | 1200 | 6500 | 700 | 25,5 | 8 | 25 | 750 | 50 |
| MIB4008D40 | 40 | HEX 41 | 11 | M8 | 1200 | 6500 | 600 | 25,5 | 10 | 30 | 1000 | 25 |
| MIB4010D40 | 40 | HEX 41 | 11 | M10 | 1200 | 6500 | 600 | 50 | 10 | 30 | 1000 | 25 |
| MIB4508D40 | 45 | HEX 41 | 15 | M8 | 1200 | 6500 | 600 | 25,5 | 10 | 30 | 1000 | 50 |
| MIB4510D40 | 45 | HEX 41 | 15 | M10 | 1200 | 6500 | 600 | 50 | 10 | 30 | 1000 | 50 |
| MIB5008D40 | 50 | HEX 41 | 15 | M8 | 1200 | 6500 | 500 | 25,5 | 15 | 40 | 1500 | 25 |
| MIB5010D40 | 50 | HEX 41 | 15 | M10 | 1200 | 6500 | 500 | 50 | 15 | 40 | 1500 | 25 |
| MIB5510D40 | 55 | HEX 41 | 15 | M10 | 1200 | 6500 | 500 | 50 | 15 | 40 | 1500 | 20 |
| MIB6010D40 | 60 | HEX 41 | 15 | M10 | 1200 | 6500 | 500 | 50 | 15 | 40 | 1500 | 20 |
| MIB6510D40 | 65 | HEX 41 | 15 | M10 | 1200 | 6500 | 300 | 50 | 15 | 40 | 1500 | 10 |
| MIB7010D40 | 70 | HEX 41 | 15 | M10 | 1200 | 6500 | 300 | 50 | 15 | 40 | 1500 | 10 |

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

Dimensions

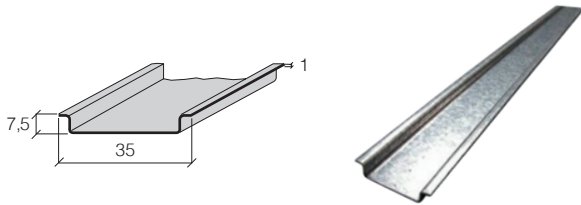


DIN rails are standardized and certified according to EN 60715. Used to mount components and devices (terminal blocks, circuit breakers, contactors, pads etc.), and are available in different versions: in a depth of 7,5 mm or 15 mm, solid or perforated with holes of various diameters and lengths. Standardized delivered length is 2000 mm. Unified shorter lengths are available on request. In addition to these lengths can be supplied rails in any length till

2000 mm and in minimum order quantity of 100 pieces. Besides the offered profiles, there are also specific profiles supplied. DIN rails are made of steel class. 11, surfaced in design Sendzimir according to EN 10346-2009-03. We can deliver also customized rails made of copper, aluminium or stainless steel.

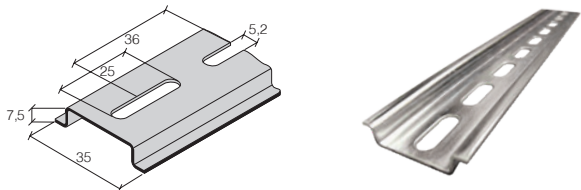
Also available in aluminium and stainless steel

TS 35 x 7,5 solid



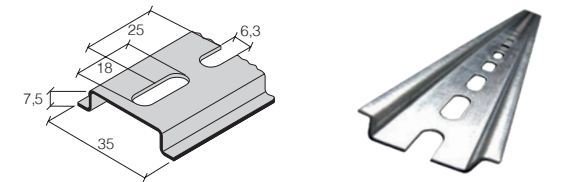
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520A29 | 2000 | 680 | 40 |
| MMD7510A29 | 1000 | 340 | 20 |

TS 35 x 7,5 perforated (5,2 x 25 mm)



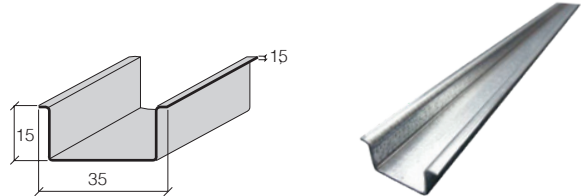
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520B29 | 2000 | 600 | 40 |
| MMD7510B29 | 1000 | 300 | 20 |

TS 35 x 7,5 perforated (6,3 x 18 mm)



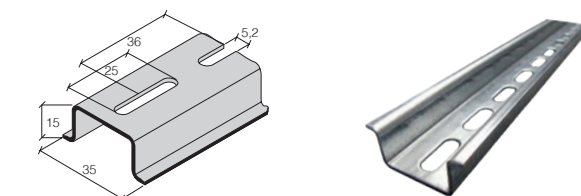
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520C29 | 2000 | 600 | 40 |
| MMD7510C29 | 1000 | 300 | 20 |

TS 35 x 15 solid



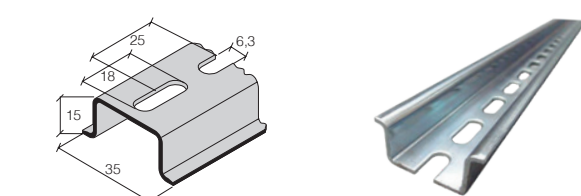
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520A29 | 2000 | 1320 | 20 |
| MMD1510A29 | 1000 | 660 | 10 |

TS 35 x 15 perforated (5,2 x 25 mm)



| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520B29 | 2000 | 1200 | 20 |
| MMD1510B29 | 1000 | 600 | 10 |

TS 35 x 15 perforated (6,3 x 18 mm)



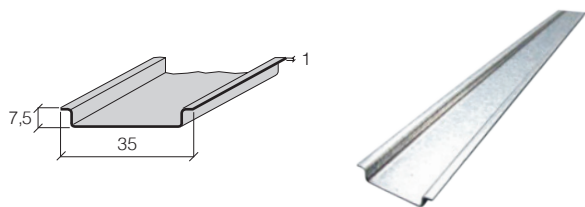
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520C29 | 2000 | 1200 | 20 |
| MMD1510C29 | 1000 | 600 | 10 |

DIN rails are standardized and certified according to EN 60715. Used to mount components and devices (terminal blocks, circuit breakers, contactors, pads etc.), and are available in different versions: in a depth of 7,5 mm or 15 mm, solid or perforated with holes of various diameters and lengths. Standardized delivered length is 2000 mm. Unified shorter lengths are available on request. In addition to these lengths can be supplied rails in any

length till 2000 mm and in minimum order quantity of 100 pieces. Besides the offered profiles, there are also specific profiles supplied. DIN rails are made of steel class. 11, surfaced in design galvanic zinc plating and passivation. We can deliver also customized rails made of copper, aluminium or stainless steel.

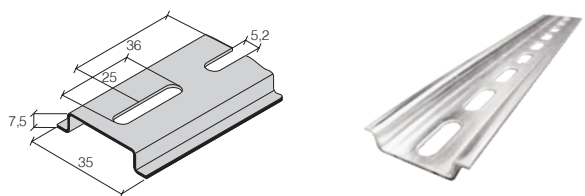
Also available in aluminium and stainless steel

TS 35 x 7,5 Galvanic Zn solid



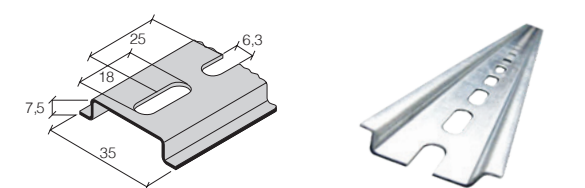
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520Z00 | 2000 | 680 | 40 |
| MMD7510Z00 | 1000 | 340 | 20 |

TS 35 x 7,5 Galvanic Zn perforated (5,2 x 25 mm)



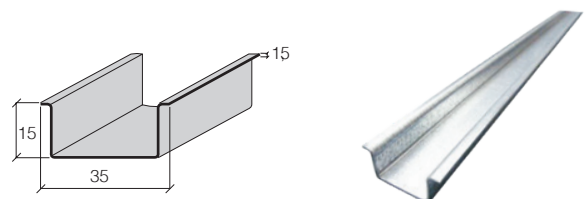
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520Z52 | 2000 | 600 | 40 |
| MMD7510Z52 | 1000 | 300 | 20 |

TS 35 x 7,5 Galvanic Zn perforated (6,3 x 18 mm)



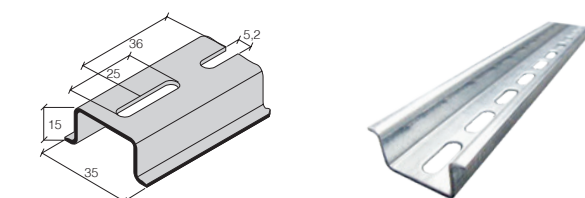
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD7520Z63 | 2000 | 600 | 40 |
| MMD7510Z63 | 1000 | 300 | 20 |

TS 35 x 15 Galvanic Zn solid



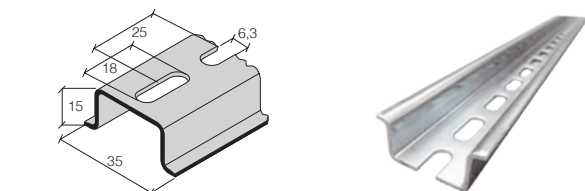
| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520Z00 | 2000 | 1320 | 20 |
| MMD1510Z00 | 1000 | 660 | 10 |

TS 35 x 15 Galvanic Zn perforated (5,2 x 25 mm)



| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520Z52 | 2000 | 1200 | 20 |
| MMD1510Z52 | 1000 | 600 | 10 |

TS 35 x 15 Galvanic Zn perforated (6,3 x 18 mm)



| Order code | Length (mm) | Weight (g) | Package (m) |
|------------|-------------|------------|-------------|
| MMD1520Z63 | 2000 | 1200 | 20 |
| MMD1510Z63 | 1000 | 600 | 10 |

DIN rail brackets are used for mounting of DIN rails and defining the distance between the device and the installation cabinet wall. Sloping DIN brackets are used to fix the mounting rail in an angle of 30°.

It is possible to place DIN rails on the flat brackets horizontally to the wall. All brackets have an opening with metric thread M6 piece for easy and convenient connection to the DIN rail. DIN rail brackets are made of steel surfaced by zinc.

DIN rail bracket – flat



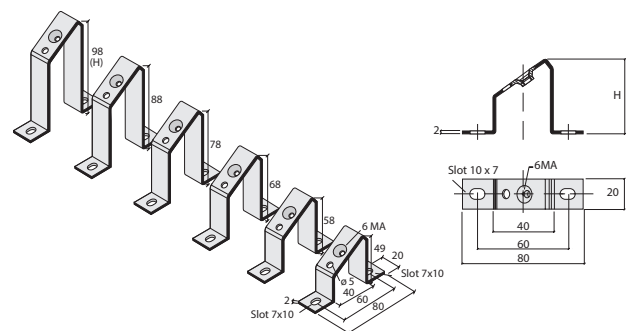
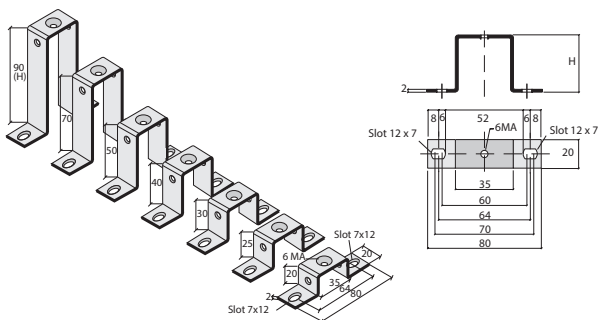
DIN rail bracket – sloping - pitch of the mounting holes 60 mm



| Order code | Type | Thread | Package (pcs) |
|------------|---------------------------|--------|---------------|
| MMD6420A23 | DIN rail bracket flat H20 | M6 | 50 |
| MMD6425A23 | DIN rail bracket flat H25 | M6 | 50 |
| MMD6430A23 | DIN rail bracket flat H30 | M6 | 50 |
| MMD6440A23 | DIN rail bracket flat H40 | M6 | 50 |
| MMD6450A23 | DIN rail bracket flat H50 | M6 | 50 |
| MMD6470A23 | DIN rail bracket flat H70 | M6 | 50 |
| MMD6490A23 | DIN rail bracket flat H90 | M6 | 50 |

| Order code | Type | Thread | Package (pcs) |
|------------|------------------------------|--------|---------------|
| MMD6049B23 | DIN rail bracket sloping H49 | M6 | 50 |
| MMD6058B23 | DIN rail bracket sloping H58 | M6 | 50 |
| MMD6068B23 | DIN rail bracket sloping H68 | M6 | 50 |
| MMD6078B23 | DIN rail bracket sloping H78 | M6 | 50 |
| MMD6088B23 | DIN rail bracket sloping H88 | M6 | 50 |
| MMD6098B23 | DIN rail bracket sloping H98 | M6 | 50 |

Dimensions

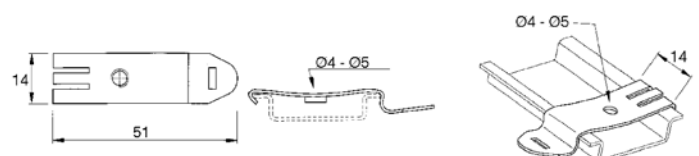


Mounting clips

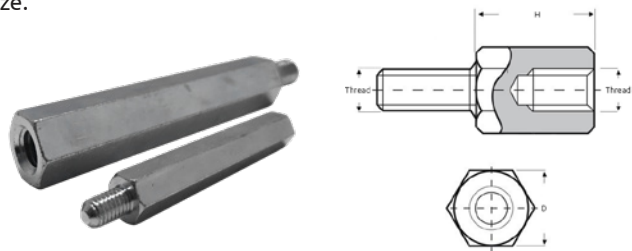


Mounting clips for mounting rail, allow installation of components which are not pre-set to clip on to rail. Material: nickel-plated steel.

| Order code | Type | Weight (g) | Package (pcs) |
|------------|------------|------------|---------------|
| MMD5104A23 | FIX-KLIPM4 | 4 | 100 |
| MMD5105A23 | FIX-KLIPM5 | 4 | 100 |



Hexagonal profile male/female metal spacers, also known as threaded standoffs, are suitable for different applications. The spacers are resistant to high temperatures and available in dimensions suitable for thread holes of M3, M4, M5, M6 and M8 size.



| Order code | Dimensions (mm) | | | Mechanical characteristics | | | |
|------------|-----------------|---|--------|----------------------------|------------|------------|------------------------|
| | H | D | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) |
| MMF0053D07 | 5 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0083D07 | 8 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0103D07 | 10 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0123D07 | 12 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0153D07 | 15 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0203D07 | 20 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0253D07 | 25 | 7 | M3 | 100 | 150 | 15 | 1,12 |
| MMF0303D07 | 30 | 7 | M3 | 100 | 150 | 10 | 1,12 |
| MMF1203D07 | 120 | 7 | M3 | 100 | 220 | 18 | 2,55 |
| MMF0104D07 | 10 | 7 | M4 | 150 | 220 | 18 | 2,55 |
| MMF0154D07 | 15 | 7 | M4 | 150 | 220 | 18 | 2,55 |
| MMF0204D07 | 20 | 7 | M4 | 150 | 220 | 18 | 2,55 |
| MMF0254D07 | 25 | 7 | M4 | 150 | 220 | 18 | 2,55 |
| MMF0304D07 | 30 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0354D07 | 35 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0404D07 | 40 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0454D07 | 45 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0504D07 | 50 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0604D07 | 60 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0704D07 | 70 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0804D07 | 80 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF0904D07 | 90 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF1004D07 | 100 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF1104D07 | 110 | 7 | M4 | 150 | 220 | 14 | 2,55 |
| MMF1204D07 | 120 | 7 | M4 | 150 | 300 | 50 | 5,05 |
| MMF0105D08 | 10 | 8 | M5 | 250 | 300 | 50 | 5,05 |
| MMF0155D08 | 15 | 8 | M5 | 250 | 300 | 50 | 5,05 |
| MMF0205D08 | 20 | 8 | M5 | 250 | 300 | 50 | 5,05 |
| MMF0255D08 | 25 | 8 | M5 | 250 | 300 | 50 | 5,05 |
| MMF0305D08 | 30 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0355D08 | 35 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0405D08 | 40 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0455D08 | 45 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0505D08 | 50 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0605D08 | 60 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0705D08 | 70 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0805D08 | 80 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0905D08 | 90 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF1005D08 | 100 | 8 | M5 | 250 | 300 | 40 | 5,05 |

Dimensions (mm) Mechanical characteristics

| Order code | Dimensions (mm) | | | Mechanical characteristics | | | |
|------------|-----------------|----|--------|----------------------------|------------|------------|------------------------|
| | H | D | Thread | T.S. (daN) | C.S. (daN) | B.S. (daN) | Tightening torque (Nm) |
| MMF1105D08 | 110 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF1205D08 | 120 | 8 | M5 | 250 | 300 | 40 | 5,05 |
| MMF0106D10 | 10 | 10 | M6 | 300 | 400 | 60 | 8,72 |
| MMF0156D10 | 15 | 10 | M6 | 300 | 400 | 60 | 8,72 |
| MMF0206D10 | 20 | 10 | M6 | 300 | 400 | 60 | 8,72 |
| MMF0256D10 | 25 | 10 | M6 | 300 | 400 | 60 | 8,72 |
| MMF0306D10 | 30 | 10 | M6 | 300 | 400 | 60 | 8,72 |
| MMF0356D10 | 35 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0406D10 | 40 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0456D10 | 45 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0506D10 | 50 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0606D10 | 60 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0706D10 | 70 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0806D10 | 80 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0906D10 | 90 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF1006D10 | 100 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF1106D10 | 110 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF1206D10 | 120 | 10 | M6 | 300 | 400 | 50 | 8,72 |
| MMF0108D12 | 10 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0158D12 | 15 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0208D12 | 20 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0258D12 | 25 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0308D12 | 30 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0358D12 | 35 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0408D12 | 40 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0458D12 | 45 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0508D12 | 50 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0608D12 | 60 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0708D12 | 70 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0808D12 | 80 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0908D12 | 90 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF1008D12 | 100 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF1108D12 | 110 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF1208D12 | 120 | 12 | M8 | 320 | 420 | 60 | 21,53 |
| MMF0108D13 | 10 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0158D13 | 15 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0208D13 | 20 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0258D13 | 25 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0308D13 | 30 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0358D13 | 35 | 13 | M8 | 350 | 450 | 70 | 21,53 |
| MMF0408D13 | 40 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0458D13 | 45 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0508D13 | 50 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0608D13 | 60 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0708D13 | 70 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0808D13 | 80 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF0908D13 | 90 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF1008D13 | 100 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF1108D13 | 110 | 13 | M8 | 350 | 450 | 60 | 21,53 |
| MMF1208D13 | 120 | 13 | M8 | 350 | 450 | 60 | 21,53 |

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

T.S. - Tensile strength | C.S. - Compression strength | B.S. - Bending strength

Quarter-turn locks can be used to hold closed all sorts of hatches, switchboard cabinets, metal lockers, machine doors etc. They are easy to operate and very robust and are ideal for cabinet and machinery construction. We are offering standard quarter-turn

locks with 10mm triangle insert along with suitable keys, wing knobs, dust covers and finger pulls. Quarter-turn locks come with locknuts; other locks and accessories are available on request.

Lock

| | |
|-----------------------|------------------|
| | NL02C104C1F1835 |
| Technical data | |
| Insert | Triangle 10 / M5 |
| Latch (mm) | 35 |
| Depth (mm) | 18 |
| Diameter (mm) | 28 |
| Package (pcs) | 250 |



Key, wing knob, dust cover, finger pull



Key



Wing knob



Dust cover

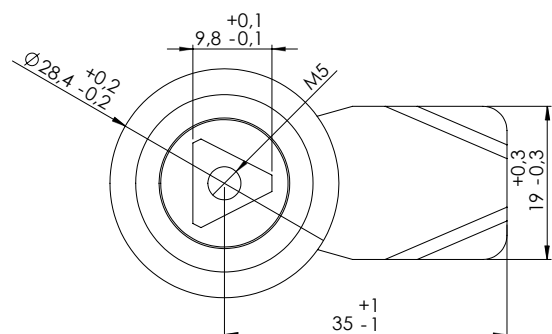
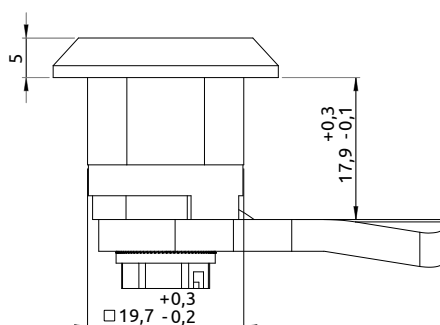


Finger pull

| | | | | |
|-----------------------|-------------|-------------|-------------|-------------|
| | NCL101ZZ003 | NCL114PP004 | NCL134PP001 | NCL124PP001 |
| Technical data | | | | |
| For insert | Triangle 10 | Triangle 10 | - | - |
| Package (pcs) | 50 | 500 | 200 | 250 |

Dimensions

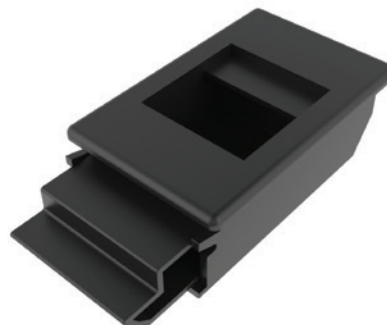
Lock



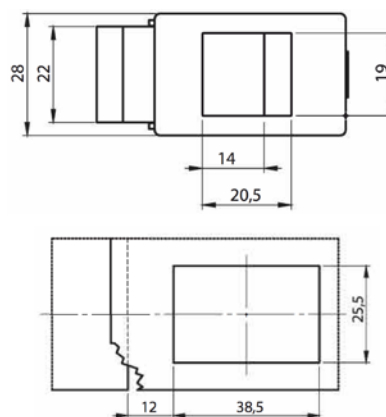
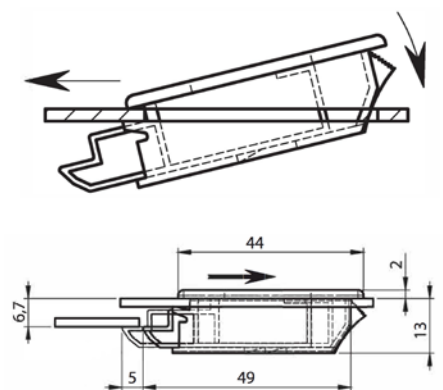
Snap-in sliding latch is a simple and effective solution for latching the cabinet doors and lids when there is no need for a locking mechanism. Toolless snap-in installation ensures quick and simple assembly.

Sliding latch

| | |
|-----------------------|-------------|
| | NFN004PP001 |
| Technical data | |
| Door thickness (mm) | 0,8–2,0 |
| Package (pcs) | 500 |



Dimensions



Flush handle

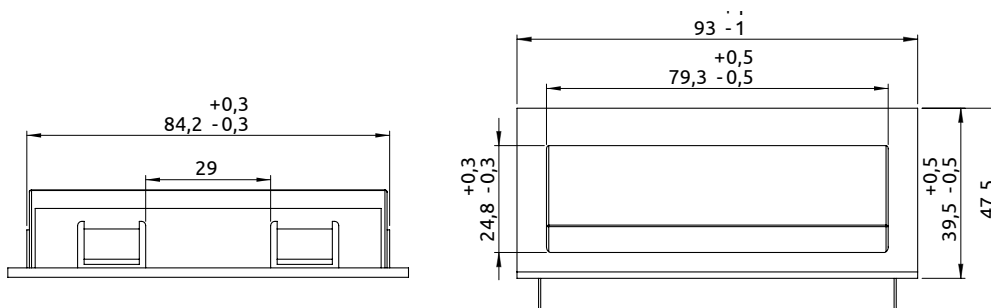
Flush handles for cabinet doors are made of fiberglass-reinforced polyamide and are quick and easy to install thanks to snap-in mounting. Other sizes are available on request.

Flush handle

| | |
|-----------------------|------------|
| | NHP0816B01 |
| Technical data | |
| Door thickness (mm) | 0,8–1,6 |
| Package (pcs) | 250 |



Dimensions



We are offering a selection of fiberglass-reinforced polyamide and steel tube door handles, suitable for electrical cabinet and machinery doors and hatches. Steel tube door handles consist

of middle supports (1), tubes of varying lengths (2) and end-pieces (3). Using middle support is required with tube lengths of 1000 mm and larger.

| | Door handle | Door handle |
|-----------------------|-------------|-------------|
| | NHP0122B01 | NHP0150B01 |
| Technical data | | |
| Length L/L1 (mm) | 142/122 | 170/150 |
| Dimensions H/T1/T2 | 45/7/12 | 54/9/14 |
| Package (pcs) | 200 | 150 |



Tube door handle

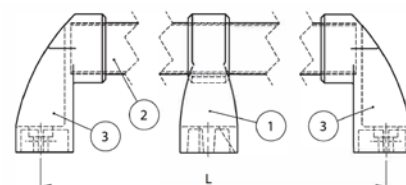
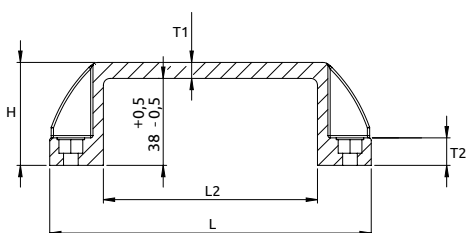
| Order code | Type | Package (pcs) |
|------------|----------------|---------------|
| NHP0021B01 | End piece | 250 |
| NHP0022B01 | Center support | 250 |
| NHP0200B01 | Tube 200 mm | 70 |
| NHP0300B01 | Tube 300 mm | 45 |
| NHP0500B01 | Tube 500 mm | 25 |



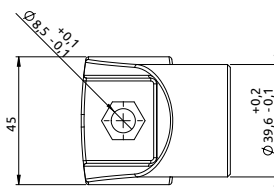
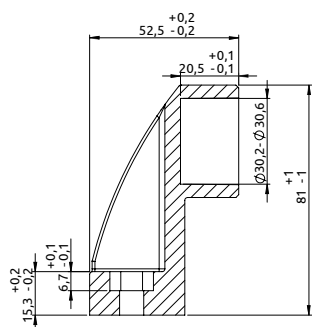
Other lengths are available on request.

Dimensions

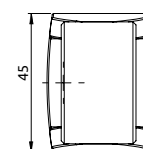
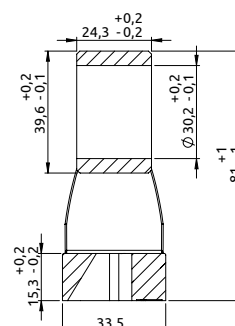
Door handles



End piece



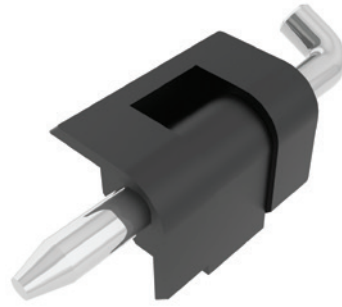
Center support



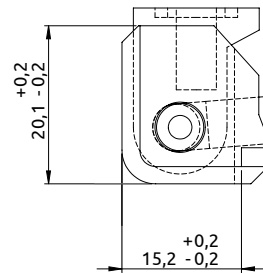
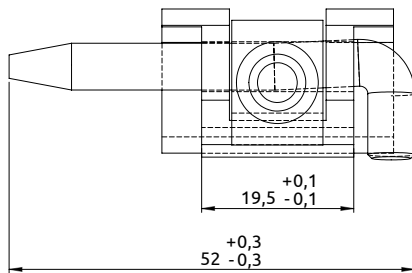
180° hinges are a simple and effective way for mounting cabinet doors. Hinges are made of die cast zinc with black coating, the pin is made of zinc-plated steel. Other colors are available on request.

180° hinge

| | |
|-----------------------|--------------|
| | NE3418Z40001 |
| Technical data | |
| Door thickness (mm) | 1,5-2,0 |
| Package (pcs) | 200 |



Dimensions



Wind stop

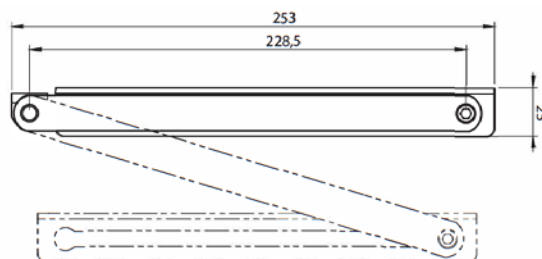
Cabinet door wind stops are essential accessories for cabinets installed in outside conditions, especially in windy areas, preventing potential hazards created by accidental closing of the cabinet door. Wind stops are made of zinc-plated steel, stainless steel version is available on request.

Wind stop

| | |
|-----------------------|-------------|
| | NCM141ZZ001 |
| Technical data | |
| Package (pcs) | 50 |



Dimensions

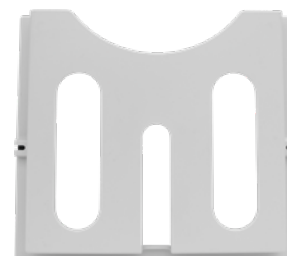


Document holders are used for storing of documents A4 or A6 (technical documentation, audit report etc.) to metal or plastic cabinets. The holder can be fixated by the double-sided adhesive tape to the cabinet wall. The tape is already prepared on the

holder, or it is possible to mount the holder using self-tapping screws (not included), which are pre-punched two oval apertures of 4,2 mm for. The holder is made of a shock-proof plastic (PS) and its offered in grey color (RAL 7035).



Holder A6



Holder A4

| | | | |
|-------------------|---|------------|------------|
| Grey (RAL 7035) * | ● | MLE0006A26 | MLE0004A26 |
|-------------------|---|------------|------------|

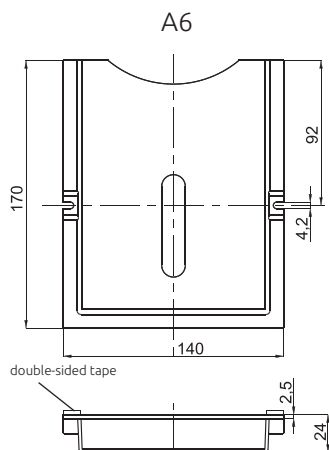
Technical data

| | | |
|------------------------------|----------------|----------------|
| Width / Height / Length (mm) | 140 / 170 / 24 | 264 / 236 / 33 |
| Weight (g) | 83 | 132 |
| Package (pcs) | 240 | 50 |
| Material | PS | PS |

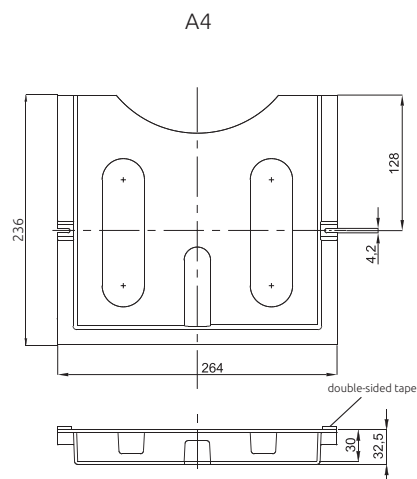
* On request, we can make other colors RAL – min. order quantity 300 pieces.

Dimensions

A6



A4



Insulated copper flexible busbars Moflex

Insulated copper flexible busbars Moflex are manufactured out of highly flexible copper strips either in bare or tinned version. They are insulated with high quality mechanical, electrical and self-extinguishing PVC.

Technical details

Electrolytic copper Cu-ETP 99,90%
Available in plain or tin-plated copper

Insulation

Self-extinguishing UL 94 V-0 black PVC insulation
Elongation: > 200 %
Tensile strength: > 15 N/mm²

Electrical characteristics

Nominal voltage 1000 V AC – 1500 V DC
Dielectric strength of the insulation: > 20 KV/mm
Operating temperature: -40 °C* up to 105 °C*
** not during dynamic pressure*



5 year
warranty



Due to skin effect,
on average

45 %

smaller cross-section
compared to regular
copper cable

Copper cable
150 mm²

1 x Moflex
24 x 1 x 2
48 mm²



320 A
68 %
smaller

Copper cables
2 x 150 mm²
300 mm²

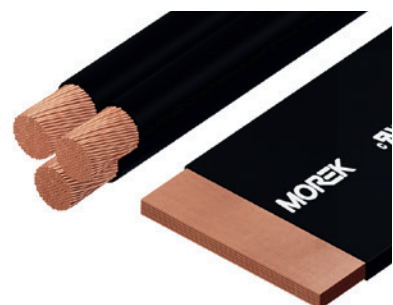
1 x Moflex
32 x 1 x 5
160 mm²



630 A
47 %
smaller

Copper cables
3 x 240 mm²
720 mm²

1 x Moflex
80 x 1 x 6
480 mm²



1250 A
33 %
smaller

In all examples above, intensities of Moflex and regular cable are calculated using the temperature rise value of 50° C.

Remarks about the tables

Description of the order code

E.g., MMC0801001

MM – Moflex

C – red copper

(T - in case of tinned copper)

080 – width

10 – number of sheets

* Products with the length of 3 meters can be ordered separately

** Reduction factor for the use of flexible busbars in parallel (see table on page 69)

When you use the Moflex flexible busbars parallel for the same phase, you need to use the reduction factors shown in the following example.

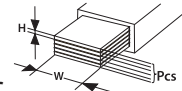
MMC0500401 Moflex 50x1x4, 200 mm², 732A at ΔT=50

2 flexible busbars in parallel: 732 x1,72 = 1259A

3 flexible busbars in parallel: 732 x2,25 = 1647A

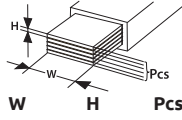


The table on the page 69 indicates the temperature rise produced by chosen current in the given cross section. This calculation does not take into account the heat dissipation from the switchboard.

Technical specification (based on width)



| W (mm) | Red copper Order code | Tinned copper Order code | W x H x Pcs | Length* | Package (pcs) | Copper weight per meter (kg) |
|--------|-----------------------|--------------------------|-----------------|---------|---------------|------------------------------|
| 9 | MMC0090201 | MMT0090201 | 9 x 0,8 x 2 | 2 m | 10 | 0,128 |
| | MMC0090301 | MMT0090301 | 9 x 0,8 x 3 | 2 m | 10 | 0,193 |
| | MMC0090401 | MMT0090401 | 9 x 0,8 x 4 | 2 m | 10 | 0,256 |
| | MMC0090501 | MMT0090501 | 9 x 0,8 x 5 | 2 m | 10 | 0,321 |
| | MMC0090601 | MMT0090601 | 9 x 0,8 x 6 | 2 m | 10 | 0,385 |
| 15,5 | MMC0160201 | MMT0160201 | 15,5 x 0,8 x 2 | 2 m | 10 | 0,214 |
| | MMC0160401 | MMT0160401 | 15,5 x 0,8 x 4 | 2 m | 10 | 0,428 |
| | MMC0160601 | MMT0160601 | 15,5 x 0,8 x 6 | 2 m | 10 | 0,642 |
| | MMC0161001 | MMT0161001 | 15,5 x 0,8 x 10 | 2 m | 10 | 1,071 |
| 20 | MMC0200201 | MMT0200201 | 20 x 1 x 2 | 2 m | 5 | 0,357 |
| | MMC0200301 | MMT0200301 | 20 x 1 x 3 | 2 m | 5 | 0,535 |
| | MMC0200401 | MMT0200401 | 20 x 1 x 4 | 2 m | 5 | 0,714 |
| | MMC0200501 | MMT0200501 | 20 x 1 x 5 | 2 m | 5 | 0,892 |
| | MMC0200601 | MMT0200601 | 20 x 1 x 6 | 2 m | 5 | 1,071 |
| | MMC0201001 | MMT0201001 | 20 x 1 x 10 | 2 m | 5 | 1,784 |
| 24 | MMC0240201 | MMT0240201 | 24 x 1 x 2 | 2 m | 5 | 0,428 |
| | MMC0240301 | MMT0240301 | 24 x 1 x 3 | 2 m | 5 | 0,642 |
| | MMC0240401 | MMT0240401 | 24 x 1 x 4 | 2 m | 5 | 0,857 |
| | MMC0240501 | MMT0240501 | 24 x 1 x 5 | 2 m | 5 | 1,071 |
| | MMC0240601 | MMT0240601 | 24 x 1 x 6 | 2 m | 5 | 1,285 |
| | MMC0240801 | MMT0240801 | 24 x 1 x 8 | 2 m | 5 | 1,713 |
| | MMC0241001 | MMT0241001 | 24 x 1 x 10 | 2 m | 5 | 2,142 |
| 32 | MMC0320201 | MMT0320201 | 32 x 1 x 2 | 2 m | 5 | 0,571 |
| | MMC0320301 | MMT0320301 | 32 x 1 x 3 | 2 m | 5 | 0,857 |
| | MMC0320401 | MMT0320401 | 32 x 1 x 4 | 2 m | 5 | 1,142 |
| | MMC0320501 | MMT0320501 | 32 x 1 x 5 | 2 m | 5 | 1,428 |
| | MMC0320601 | MMT0320601 | 32 x 1 x 6 | 2 m | 5 | 1,713 |
| | MMC0320801 | MMT0320801 | 32 x 1 x 8 | 2 m | 5 | 2,284 |
| | MMC0321001 | MMT0321001 | 32 x 1 x 10 | 2 m | 5 | 2,851 |
| 40 | MMC0400201 | MMT0400201 | 40 x 1 x 2 | 2 m | 5 | 0,714 |
| | MMC0400301 | MMT0400301 | 40 x 1 x 3 | 2 m | 5 | 1,071 |
| | MMC0400401 | MMT0400401 | 40 x 1 x 4 | 2 m | 5 | 1,428 |
| | MMC0400501 | MMT0400501 | 40 x 1 x 5 | 2 m | 5 | 1,784 |
| | MMC0400601 | MMT0400601 | 40 x 1 x 6 | 2 m | 5 | 2,141 |
| | MMC0400801 | MMT0400801 | 40 x 1 x 8 | 2 m | 5 | 2,855 |
| | MMC0401001 | MMT0401001 | 40 x 1 x 10 | 2 m | 5 | 3,569 |
| 50 | MMC0500301 | MMT0500301 | 50 x 1 x 3 | 2 m | 2 | 1,338 |
| | MMC0500401 | MMT0500401 | 50 x 1 x 4 | 2 m | 2 | 1,784 |
| | MMC0500501 | MMT0500501 | 50 x 1 x 5 | 2 m | 2 | 2,231 |
| | MMC0500601 | MMT0500601 | 50 x 1 x 6 | 2 m | 2 | 2,677 |
| | MMC0500801 | MMT0500801 | 50 x 1 x 8 | 2 m | 2 | 3,569 |
| | MMC0501001 | MMT0501001 | 50 x 1 x 10 | 2 m | 2 | 4,461 |
| 63 | MMC0630301 | MMT0630301 | 63 x 1 x 3 | 2 m | 2 | 1,686 |
| | MMC0630401 | MMT0630401 | 63 x 1 x 4 | 2 m | 2 | 2,248 |
| | MMC0630501 | MMT0630501 | 63 x 1 x 5 | 2 m | 2 | 2,811 |
| | MMC0630601 | MMT0630601 | 63 x 1 x 6 | 2 m | 2 | 3,373 |
| | MMC0630801 | MMT0630801 | 63 x 1 x 8 | 2 m | 2 | 4,497 |
| | MMC0631001 | MMT0631001 | 63 x 1 x 10 | 2 m | 2 | 5,621 |
| 80 | MMC0800301 | MMT0800301 | 80 x 1 x 3 | 2 m | 2 | 2,141 |
| | MMC0800401 | MMT0800401 | 80 x 1 x 4 | 2 m | 2 | 2,851 |
| | MMC0800501 | MMT0800501 | 80 x 1 x 5 | 2 m | 2 | 3,569 |
| | MMC0800601 | MMT0800601 | 80 x 1 x 6 | 2 m | 2 | 4,283 |
| | MMC0800801 | MMT0800801 | 80 x 1 x 8 | 2 m | 2 | 5,710 |
| | MMC0801001 | MMT0801001 | 80 x 1 x 10 | 2 m | 2 | 7,138 |
| 100 | MMC1000401 | MMT1000401 | 100 x 1 x 4 | 2 m | 2 | 3,569 |
| | MMC1000501 | MMT1000501 | 100 x 1 x 5 | 2 m | 2 | 4,461 |
| | MMC1000601 | MMT1000601 | 100 x 1 x 6 | 2 m | 2 | 5,353 |
| | MMC1000801 | MMT1000801 | 100 x 1 x 8 | 2 m | 2 | 7,138 |
| | MMC1001001 | MMT1001001 | 100 x 1 x 10 | 2 m | 2 | 8,922 |

Technical specification (based on amperage)

| Amperage (A) | Red copper Part no. | Tinned copper Part no. |  | | | Copper weight per meter (kg) | Cu cross section (mm ²) | Ampacity at rise of temperature from 35° C to: | | | | | Reduction factor** | | | |
|--------------|---------------------|------------------------|---|---|-----|------------------------------|-------------------------------------|--|-------|-------|-------|-------------|---|---|------|------|
| | | | W | H | Pcs | | | 105 °C | 95 °C | 85 °C | 75 °C | 65 °C |  |  | | |
| | | | | | | | ΔT=70 | ΔT=60 | ΔT=50 | ΔT=40 | ΔT=30 | | | | | |
| > 80 | MMC0090201 | MMT0090201 | 9 | x | 0,8 | x | 2 | 0,128 | 14 | 113 | 105 | 96 | 86 | 74 | 1,72 | 2,25 |
| > 125 | MMC0090301 | MMT0090301 | 9 | x | 0,8 | x | 3 | 0,193 | 21,6 | 160 | 149 | 136 | 121 | 104 | 1,72 | 2,25 |
| > 160 | MMC0090401 | MMT0090401 | 9 | x | 0,8 | x | 4 | 0,256 | 29 | 204 | 189 | 173 | 155 | 133 | 1,72 | 2,25 |
| | MMC0090501 | MMT0090501 | 9 | x | 0,8 | x | 5 | 0,321 | 36 | 272 | 253 | 231 | 206 | 177 | 1,72 | 2,25 |
| > 250 | MMC0160201 | MMT0160201 | 15,5 | x | 0,8 | x | 2 | 0,214 | 24,8 | 197 | 183 | 167 | 149 | 128 | 1,72 | 2,25 |
| | MMC0090601 | MMT0090601 | 9 | x | 0,8 | x | 6 | 0,385 | 43,2 | 340 | 316 | 289 | 258 | 221 | 1,72 | 2,25 |
| > 320 | MMC0200201 | MMT0200201 | 20 | x | 1 | x | 2 | 0,357 | 40 | 329 | 306 | 280 | 250 | 215 | 1,72 | 2,25 |
| > 320 | MMC0160401 | MMT0160401 | 15,5 | x | 0,8 | x | 4 | 0,428 | 49,6 | 379 | 353 | 322 | 288 | 247 | 1,72 | 2,25 |
| | MMC0200301 | MMT0200301 | 20 | x | 1 | x | 3 | 0,535 | 60 | 427 | 397 | 363 | 324 | 278 | 1,72 | 2,25 |
| | MMC0240201 | MMT0240201 | 24 | x | 1 | x | 2 | 0,428 | 48 | 451 | 419 | 384 | 342 | 294 | 1,72 | 2,25 |
| > 400 | MMC0160601 | MMT0160601 | 15,5 | x | 0,8 | x | 6 | 0,642 | 74,4 | 489 | 455 | 416 | 371 | 319 | 1,72 | 2,25 |
| | MMC0161001 | MMT0161001 | 15,5 | x | 0,8 | x | 10 | 1,071 | 124 | 539 | 501 | 458 | 409 | 351 | 1,72 | 2,25 |
| | MMC0200401 | MMT0200401 | 20 | x | 1 | x | 4 | 0,714 | 80 | 478 | 444 | 406 | 363 | 311 | 1,72 | 2,25 |
| | MMC0200501 | MMT0200501 | 20 | x | 1 | x | 5 | 0,892 | 100 | 497 | 463 | 423 | 378 | 324 | 1,72 | 2,25 |
| | MMC0200601 | MMT0200601 | 20 | x | 1 | x | 6 | 1,071 | 120 | 547 | 509 | 465 | 415 | 356 | 1,72 | 2,25 |
| | MMC0240301 | MMT0240301 | 24 | x | 1 | x | 3 | 0,642 | 72 | 491 | 457 | 418 | 373 | 320 | 1,72 | 2,25 |
| | MMC0240401 | MMT0240401 | 24 | x | 1 | x | 4 | 0,857 | 96 | 553 | 514 | 470 | 420 | 360 | 1,72 | 2,25 |
| | MMC0320201 | MMT0320201 | 32 | x | 1 | x | 2 | 0,571 | 64 | 483 | 450 | 411 | 367 | 315 | 1,72 | 2,25 |
| | MMC0320301 | MMT0320301 | 32 | x | 1 | x | 3 | 0,857 | 96 | 569 | 529 | 484 | 432 | 371 | 1,72 | 2,25 |
| > 500 | MMC0400201 | MMT0400201 | 40 | x | 1 | x | 2 | 0,714 | 80 | 535 | 498 | 455 | 406 | 349 | 1,72 | 2,25 |
| | MMC0240501 | MMT0240501 | 24 | x | 1 | x | 5 | 1,071 | 120 | 610 | 568 | 519 | 463 | 398 | 1,72 | 2,25 |
| | MMC0240601 | MMT0240601 | 24 | x | 1 | x | 6 | 1,285 | 144 | 674 | 626 | 573 | 511 | 439 | 1,72 | 2,25 |
| | MMC0320401 | MMT0320401 | 32 | x | 1 | x | 4 | 1,142 | 128 | 652 | 606 | 554 | 495 | 425 | 1,72 | 2,25 |
| | MMC0400301 | MMT0400301 | 40 | x | 1 | x | 3 | 1,071 | 120 | 618 | 575 | 525 | 469 | 403 | 1,72 | 2,25 |
| > 630 | MMC0400401 | MMT0400401 | 40 | x | 1 | x | 4 | 1,428 | 160 | 727 | 676 | 618 | 552 | 474 | 1,72 | 2,25 |
| > 630 | MMC0500301 | MMT0500301 | 50 | x | 1 | x | 3 | 1,338 | 150 | 701 | 652 | 597 | 532 | 457 | 1,72 | 2,25 |
| | MMC0201001 | MMT0201001 | 20 | x | 1 | x | 10 | 1,784 | 200 | 763 | 709 | 649 | 579 | 497 | 1,72 | 2,25 |
| | MMC0240801 | MMT0240801 | 24 | x | 1 | x | 8 | 1,713 | 192 | 800 | 744 | 681 | 607 | 522 | 1,72 | 2,25 |
| | MMC0241001 | MMT0241001 | 24 | x | 1 | x | 10 | 2,142 | 240 | 875 | 814 | 744 | 664 | 570 | 1,72 | 2,25 |
| | MMC0320501 | MMT0320501 | 32 | x | 1 | x | 5 | 1,428 | 160 | 762 | 708 | 648 | 578 | 496 | 1,72 | 2,25 |
| | MMC0320601 | MMT0320601 | 32 | x | 1 | x | 6 | 1,713 | 192 | 850 | 790 | 723 | 645 | 554 | 1,72 | 2,25 |
| | MMC0400501 | MMT0400501 | 40 | x | 1 | x | 5 | 1,784 | 200 | 903 | 840 | 768 | 686 | 589 | 1,72 | 2,25 |
| | MMC0500401 | MMT0500401 | 50 | x | 1 | x | 4 | 1,784 | 200 | 861 | 801 | 732 | 654 | 561 | 1,72 | 2,25 |
| > 800 | MMC0630301 | MMT0630301 | 63 | x | 1 | x | 3 | 1,686 | 189 | 802 | 746 | 683 | 609 | 523 | 1,65 | 2,12 |
| > 800 | MMC0320801 | MMT0320801 | 32 | x | 1 | x | 8 | 2,284 | 256 | 1023 | 951 | 870 | 777 | 667 | 1,72 | 2,25 |
| | MMC0400601 | MMT0400601 | 40 | x | 1 | x | 6 | 2,141 | 240 | 1018 | 947 | 866 | 773 | 663 | 1,72 | 2,25 |
| | MMC0500501 | MMT0500501 | 50 | x | 1 | x | 5 | 2,231 | 250 | 1098 | 1021 | 934 | 834 | 716 | 1,72 | 2,25 |
| | MMC0630401 | MMT0630401 | 63 | x | 1 | x | 4 | 2,248 | 252 | 1013 | 942 | 861 | 769 | 660 | 1,65 | 2,12 |
| | MMC0800301 | MMT0800301 | 80 | x | 1 | x | 3 | 2,141 | 240 | 977 | 909 | 831 | 742 | 637 | 1,65 | 2,12 |
| > 1000 | MMC0321001 | MMT0321001 | 32 | x | 1 | x | 10 | 2,851 | 320 | 1233 | 1147 | 1049 | 936 | 804 | 1,72 | 2,25 |
| | MMC0400801 | MMT0400801 | 40 | x | 1 | x | 8 | 2,855 | 320 | 1233 | 1146 | 1048 | 936 | 803 | 1,72 | 2,25 |
| | MMC0401001 | MMT0401001 | 40 | x | 1 | x | 10 | 3,569 | 400 | 1397 | 1300 | 1189 | 1061 | 911 | 1,65 | 2,12 |
| | MMC0500601 | MMT0500601 | 50 | x | 1 | x | 6 | 2,677 | 300 | 1226 | 1140 | 1043 | 931 | 799 | 1,65 | 2,12 |
| | MMC0500801 | MMT0500801 | 50 | x | 1 | x | 8 | 3,569 | 400 | 1392 | 1295 | 1184 | 1057 | 907 | 1,65 | 2,12 |
| | MMC0630501 | MMT0630501 | 63 | x | 1 | x | 5 | 2,811 | 315 | 1223 | 1137 | 1040 | 928 | 797 | 1,65 | 2,12 |
| | MMC0630601 | MMT0630601 | 63 | x | 1 | x | 6 | 3,373 | 378 | 1442 | 1341 | 1226 | 1095 | 940 | 1,65 | 2,12 |
| | MMC0800401 | MMT0800401 | 80 | x | 1 | x | 4 | 2,851 | 320 | 1202 | 1118 | 1022 | 912 | 783 | 1,65 | 2,12 |
| | MMC0800501 | MMT0800501 | 80 | x | 1 | x | 5 | 3,569 | 400 | 1395 | 1298 | 1187 | 1059 | 909 | 1,65 | 2,12 |
| | MMC1000401 | MMT1000401 | 100 | x | 1 | x | 4 | 3,569 | 400 | 1449 | 1348 | 1233 | 1100 | 945 | 1,6 | 2,02 |
| > 1250 | MMC0501001 | MMT0501001 | 50 | x | 1 | x | 10 | 4,461 | 500 | 1651 | 1535 | 1404 | 1253 | 1076 | 1,65 | 2,12 |
| | MMC0630801 | MMT0630801 | 63 | x | 1 | x | 8 | 4,497 | 504 | 1656 | 1540 | 1409 | 1257 | 1079 | 1,65 | 2,12 |
| | MMC0800601 | MMT0800601 | 80 | x | 1 | x | 6 | 4,283 | 480 | 1630 | 1516 | 1387 | 1238 | 1063 | 1,65 | 2,12 |
| | MMC1000501 | MMT1000501 | 100 | x | 1 | x | 5 | 4,461 | 500 | 1638 | 1523 | 1393 | 1243 | 1067 | 1,6 | 2,02 |
| | MMC1000601 | MMT1000601 | 100 | x | 1 | x | 6 | 5,353 | 600 | 1845 | 1715 | 1569 | 1400 | 1202 | 1,6 | 2,02 |
| > 1600 | MMC0631001 | MMT0631001 | 63 | x | 1 | x | 10 | 5,621 | 630 | 1901 | 1768 | 1617 | 1443 | 1239 | 1,65 | 2,12 |
| | MMC0800801 | MMT0800801 | 80 | x | 1 | x | 8 | 5,71 | 640 | 1902 | 1769 | 1618 | 1444 | 1240 | 1,65 | 2,12 |
| | MMC0801001 | MMT0801001 | 80 | x | 1 | x | 10 | 7,138 | 800 | 2106 | 1958 | 1791 | 1599 | 1372 | 1,65 | 2,12 |
| | MMC1000801 | MMT1000801 | 100 | x | 1 | x | 8 | 7,138 | 800 | 2152 | 2001 | 1830 | 1634 | 1402 | 1,6 | 2,02 |
| > 2000 | MMC1001001 | MMT1001001 | 100 | x | 1 | x | 10 | 8,922 | 1000 | 2353 | 2188 | 2001 | 1786 | 1533 | 1,6 | 2,02 |

Selection of Moflex

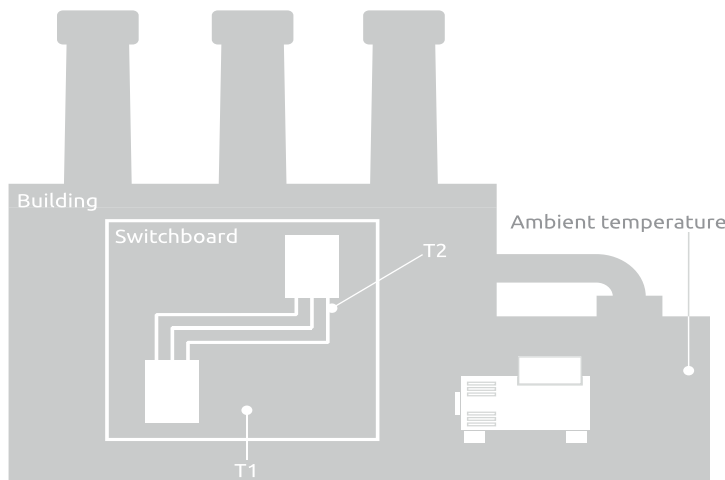
ΔT = temperature rise of the Moflex conductor (°C)
 T1 = internal temperature of the switchboard (°C)
 T2 = temperature of the Moflex conductor (°C)

For example, In = 1000A connection

Step 1: T1 = 35 °C and T2 = 85 °C
 $\Delta T = T2 - T1$
 $\Delta T = 85 \text{ °C} - 35 \text{ °C}$
 $\Delta T = 50 \text{ °C}$

Step 2: Please find from the page 69 table on the column $\Delta T = 50$ the closest value of the 1000A. MMC0321001 Moflex 32x1x10, 320 mm², 1049A or MMC0630501 Moflex 63x1x5, 315 mm², 1040A.

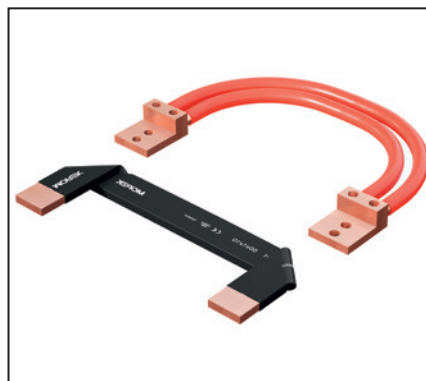
Step 3: Select the Moflex flexible busbar according to the equipment terminal width.



Moflex saves you time and money



Does not require additional connection parts and saves the time of installation

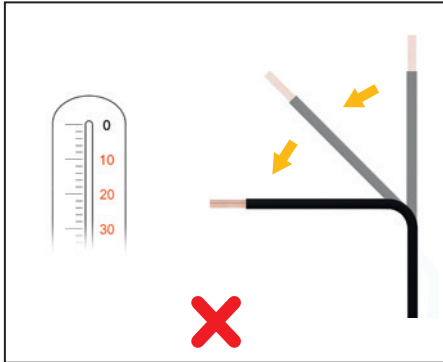


Makes direct connection without additional connectors, enables you to save space in the panel



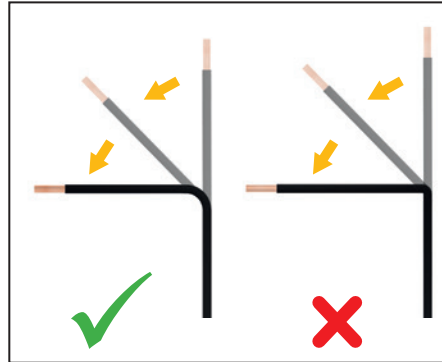
Gives additional flexibility comparing to standard rigid bar and it is easily adapted to unexpected project change

Assembly instructions



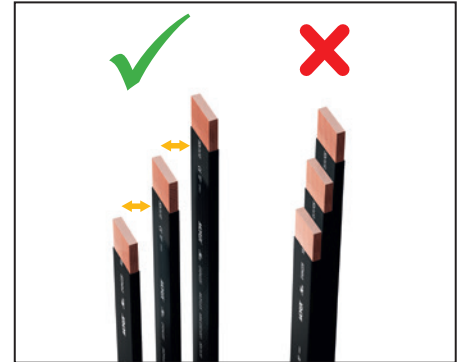
No bending at low temperatures (< 0°C or < 30F)

Elongation of the coating before breakage is reduced at low temperatures. Recommended is bending at room temperature.



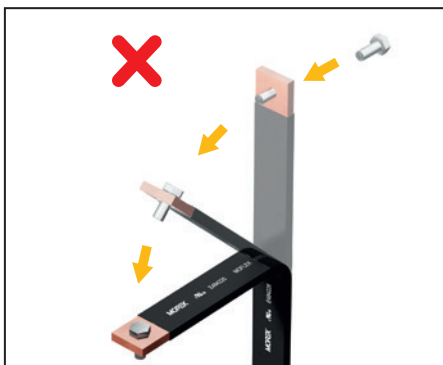
No sharp-edged bending

Recommended inner radius for bending:
busbar thickness 1 - 5 mm: radius 5 mm
busbar thickness 6 - 10 mm: radius = thickness



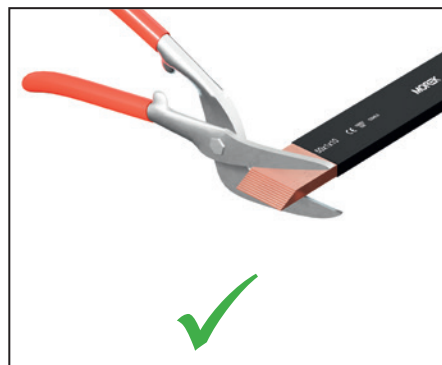
Parallel assembly has influence to heat radiation

Recommended distance between bars = min. 1 x bar width. Please pay attention to correction factors for parallel assembly!

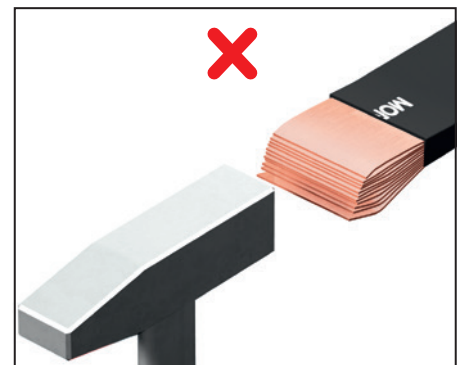


Copper files slide when bending to compensate the different length of inner and outer file

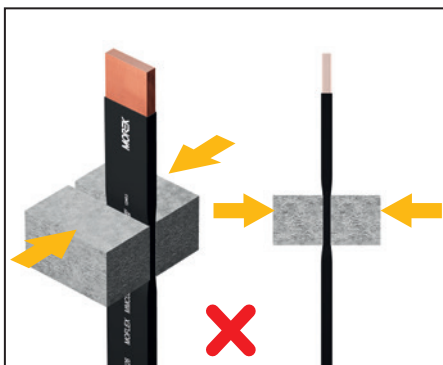
No fixation before bending! It hinders the slide and may lead to burst of PVC-coating.



Bars must be cut if copper slides emerge after bending

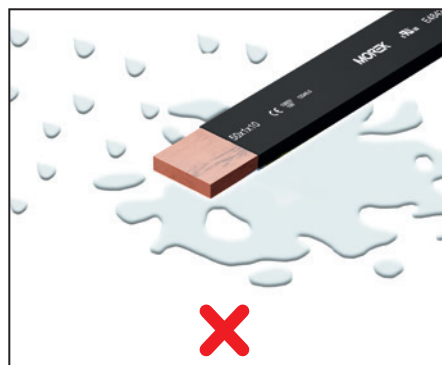


Heavy push back of copper files may cause deformation with resulting damage of PVC-coating



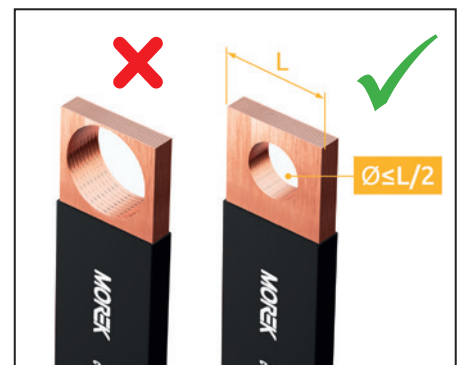
Please avoid crushing of the PVC coating

Damage of coating or reduced wall thickness endangers function of isolation.



Do not expose to dirt, water and humidity

Humidity may invade by the open ends of the busbars. This causes copper oxidation and endangers operating safety.

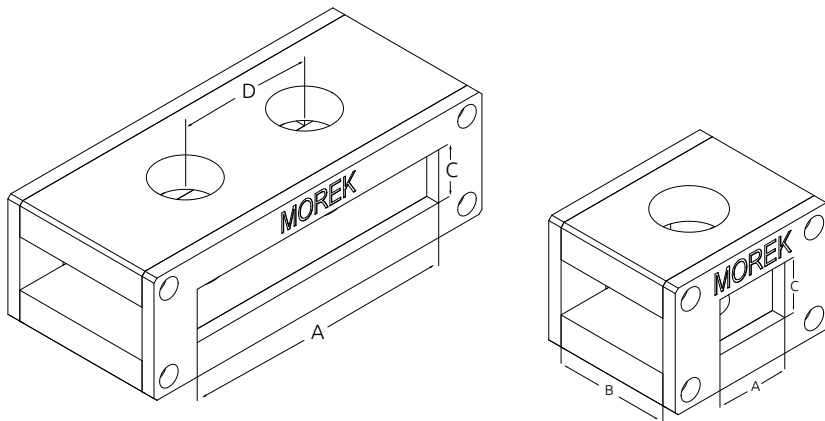


Do not drill holes exceeding half of the width of the bar

Drilling tool for Moflex is designed to drill the correct hole to the multiple layer flexible busbars. Combining suitable width drilling tool with right hole size drilling guide, will give big variety of the drilling holes to the flexible busbars.

| Order code | Product name | Flexible busbar max. width (mm) | Dimensions (mm) | | | |
|------------|--------------|---------------------------------|-----------------|----|------|----|
| | | | A | B | C | D |
| MMA0024E30 | MD16/24 | 16/24 | 17 | 25 | 15,5 | - |
| MMA0032E30 | MD20/32 | 20/32 | 21 | 33 | 15,5 | - |
| MMA0050E30 | MD40/50 | 40/50 | 51 | 41 | 15,5 | - |
| MMA0063E30 | MD40/63 | 40/63 | 64 | 41 | 15,5 | - |
| MMA0080E30 | MD80 | 80 | 81 | - | 15,5 | 40 |
| MMA0100E30 | MD100 | 100 | 101 | - | 15,5 | 50 |
| MMA0120E30 | MD120 | 120 | 121 | - | 15,5 | 60 |

Dimensions



Drilling guide for drilling tool

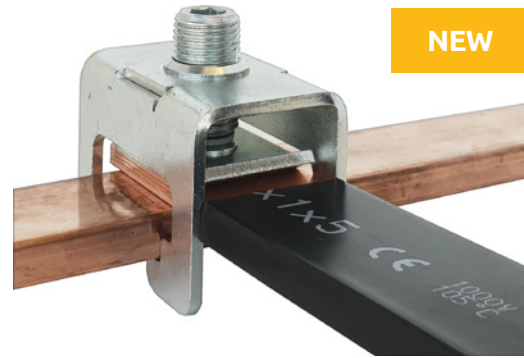
| Order code | Product name | Drilling hole |
|------------|--------------|---------------|
| MMA0011E30 | DG7 | 6 |
| MMA0012E30 | DG9 | 8 |
| MMA0013E30 | DG11 | 10 |
| MMA0014E30 | DG13 | 12 |



Moflex clamp is designed for connecting Moflex flexible busbars to copper busbar, enabling fastening up to 50 x 10 mm Moflex flexible busbars to 50 x 10 mm copper busbars.

Advantages

- Quick and easy installation
- Ideal for on site modifications
- Allows for excellent electrical contact
- Terminal has visible indication of tightening torque



MFC30-32



MFC40-32



MFC40-50



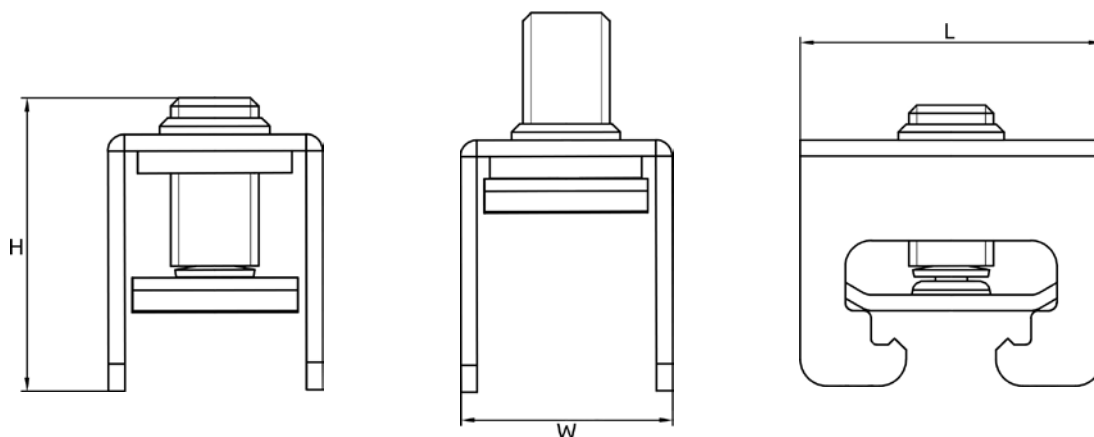
MFC50-50

| | MFC3010E32 | MFC4010E32 | MFC4010E50 | MFC5010E50 |
|-------------------------|------------|------------|------------|------------|
| Mounting Cu busbar (mm) | 30x5-10 | 40x5-10 | 40x5-10 | 50x5-10 |
| For Moflex width (mm) | 9-32 | 9-32 | 9-50 | 9-50 |
| Moflex max. layers | 10 | 10 | 10 | 10 |

Technical data

| | | | | |
|------------------------------|--------------|--------------|--------------|--------------|
| Nominal voltage AC / DC (V) | 1000 | 1000 | 1000 | 1000 |
| Width / Height / Length (mm) | 40 / 49 / 57 | 40 / 49 / 67 | 58 / 49 / 67 | 58 / 49 / 77 |
| Screw, hexagonal key (AV) | No. 8 | No. 8 | No. 8 | No. 8 |
| Tightening torque (Nm) | 30 | 30 | 35 | 35 |
| Weight (g) | 200 | 225 | 275 | 310 |
| Package (pcs) | 3 | 3 | 3 | 3 |

Dimensions



Sealing and edge protection profiles

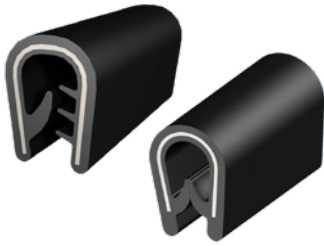
Wide range of sealing and edge protection profiles

Custom made profiles available for special applications:

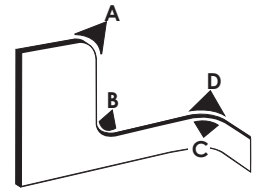
- Low-friction coating
- Fire- / flame-proof profiles
- Hygiene profiles

Profiles in pre-cut lengths of your choice





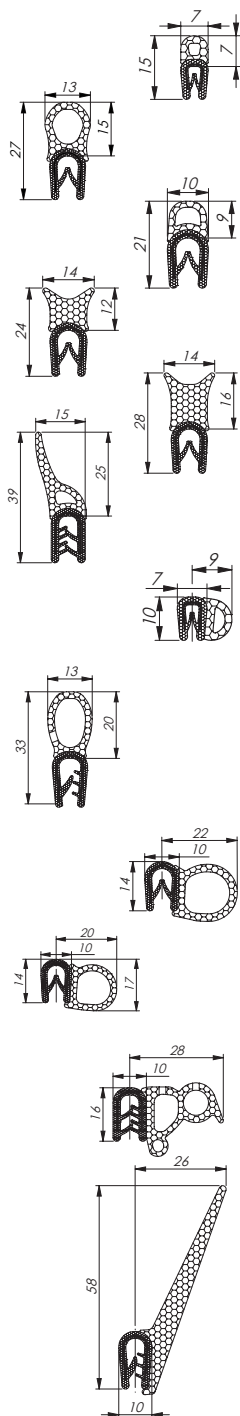
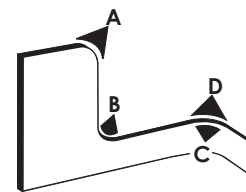
The edge protection profiles are designed to protect the transition edges (cable tray or cabinet racks, etc.). The body of protection profile is made of PVC material and the product is delivered in two colors - in grey (RAL 7035) or black. The skeleton is made of metal profile that allows easy installation without additional tools. The edge protection profile is offered in two standard versions with the possibility of use on sheet thickness 1 - 2 mm or 1 - 4 mm. The operating temperature is from -25 °C to +65 °C.



| Order code | Color | Clamping range (mm) | The minimum bending radius | Weight (kg) | Package (m) |
|------------|-------|---------------------|--------------------------------|-------------|-------------|
| MCA003AG12 | grey | 1 - 2 | A = 15, B = 15, C = 10, D = 10 | 7 | 100 |
| MCA003BG12 | | | | 0,7 | 10 |
| MCA002AB12 | black | 1 - 2 | A = 15, B = 15, C = 10, D = 10 | 7 | 100 |
| MCA002BB12 | | | | 0,7 | 10 |
| MCA015AG12 | grey | 1 - 4 | A = 30, B = 20, C = 20, D = 20 | 16 | 100 |
| MCA015BG12 | | | | 1,6 | 10 |
| MCA001AB12 | black | 1 - 4 | A = 30, B = 20, C = 20, D = 20 | 16 | 100 |
| MCA001BB12 | | | | 1,6 | 10 |



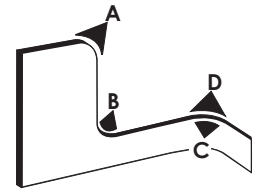
Self-gripping sealing profile made with a black PVC carrier with sealing lip or sealing tube from EPDM. Integrated steel strip core. Other colors are available on request.



| Order code | Color | Clamping range (mm) | The minimum bending radius | Weight (kg/m) | Package (m) |
|------------|-------|---------------------|----------------------------------|---------------|-------------|
| MCC001AB12 | black | 1 - 2 | A = 20, B = 40, C = 10, D = 10 | 0,08 | 100 |
| MCC002AB12 | black | 1 - 4 | A = 60, B = 80, C = 20, D = 20 | 0,265 | 50 |
| MCC007AB12 | black | 1 - 4 | A = 70, B = 80, C = 15, D = 15 | 0,17 | 50 |
| MCC011AB12 | black | 1 - 4 | A = 50, B = 150, C = 50, D = 50 | 0,218 | 50 |
| MCC012AB12 | black | 1 - 4 | A = 50, B = 150, C = 50, D = 50 | 0,085 | 50 |
| MCC013AB12 | black | 1,5 - 3,5 | A = 80, B = 150, C = 30, D = 30 | 0,257 | 50 |
| MCB005AB12 | black | 1 - 2 | A = 20, B = 15, C = 30, D = 30 | 0,085 | 100 |
| MCC008AB12 | black | 1 - 2,5 | A = 80, B = 100, C = 20, D = 20 | 0,2306 | 50 |
| MCC009AB12 | | 2 - 4 | | 0,24 | |
| MCC010AB12 | | 4 - 6 | | 0,224 | |
| MCB004AB12 | black | 1 - 4 | A = 50, B = 30, C = 100, D = 120 | 0,2 | 50 |
| MCB002AB12 | black | 1 - 4 | A = 60, B = 50, C = 120, D = 120 | 0,265 | 50 |
| MCB011AB12 | black | 1 - 2,5 | A = 80, B = 80, C = 140, D = 140 | 0,22 | 50 |
| MCB012AB12 | | 2,5 - 4 | | 0,28 | |
| MCB013AB12 | | 4 - 6 | | 0,31 | |
| MCB038AB12 | black | 1 - 2,5 | A = 80, B = -, C = 120, D = 120 | 0,412 | 25 |
| MCC004AB12 | | 2,5 - 4 | | 0,352 | |
| MCC005AB12 | | 4 - 6 | | 0,352 | |



Self-gripping sealing profile with a black EPDM rubber carrier and a sealing lip and / or sealing tube from sponge-rubber. Integrated steel strip core or steel wire core.



| | Order code | Color | Clamping range (mm) | The minimum bending radius | Weight (kg/m) | Package (m) |
|--|------------|-------|---------------------|-----------------------------------|---------------|-------------|
| | MCC014AB12 | black | 1 - 3 | A = 50, B = 180, C = 30, D = 30 | 0,145 | 100 |
| | MCC017AB12 | black | 0,5 - 1,5 | A = 50, B = 80, C = 25, D = 25 | 0,089 | 100 |
| | MCC019AB12 | black | 1 - 2,5 | A = 100, B = 180, C = 25, D = 25 | 0,17 | 100 |
| | MCC020AB12 | | 2,5 - 4 | | 0,2 | 100 |
| | MCC021AB12 | black | 1 - 2,5 | A = 60, B = 120, C = 25, D = 25 | 0,19 | 100 |
| | MCC023AB12 | black | 1 - 2 | A = 50, B = 60, C = 20, D = 20 | 0,14 | 100 |
| | MCC024AB12 | black | 1 - 3 | A = 50, B = 200, C = 25, D = 25 | 0,14 | 50 |
| | MCB019AB12 | black | 2 | A = 50, B = 20, C = 120, D = 40 | 0,1293 | 100 |
| | MCB022AB12 | black | 1 - 2,5 | A = 20, B = 50, C = 20, D = 60 | 0,1 | 100 |
| | MCB025AB12 | black | 0,8 - 2,5 | A = 40, B = 40, C = 100, D = 60 | 0,13 | 100 |
| | MCB026AB12 | black | 2 | A = 30, B = 40, C = 30, D = 60 | 0,13 | 100 |
| | MCB032AB12 | black | 1 - 2 | A = 100, B = 200, C = 100, D = 60 | 0,113 | 100 |
| | MCB021AB12 | black | 1 - 3,5 | A = 200, B = 80, C = 200, D = 200 | 0,265 | 50 |
| | MCB030AB12 | black | 1,5 - 3 | A = 80, B = 60, C = 200, D = 80 | 0,182 | 4 x 25 |
| | MCC016AB12 | black | 1 - 2,5 | A = 150, B = 250, C = 20, D = 20 | 0,176 | 50 |
| | MCC018AB12 | black | 1 - 2,5 | A = 60, B = 250, C = 25, D = 70 | 0,18 | 3 x 50 |
| | MCC022AB12 | black | 1 - 2 | A = 60, B = 200, C = 20, D = 20 | 0,184 | 100 |
| | MCC025AB12 | black | 1 - 3 | A = 80, B = 250, C = 25, D = 60 | 0,184 | 100 |

Plastic cable glands

| IP68

| Polyamide

| Vibration- and UV-resistant

| Halogen-free

| Easy to assemble



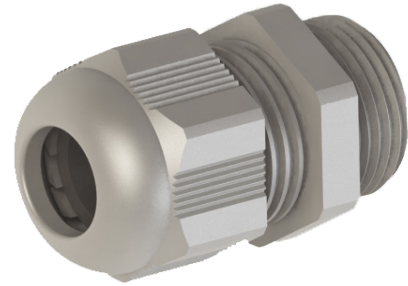
Technical specifications

Material

- Cap nut and gland body: polyamide PA6 V2
- Sealing ring: TPV

Properties

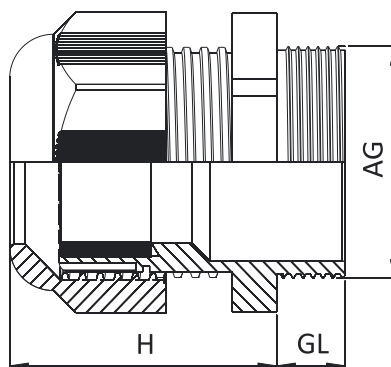
- Connection thread: metric (EN 60423) / PG (DIN 40430)
- Protection class: IP68 at up to 5 bar
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- Vibration resistance
- UV resistance
- Easy to assemble
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----------|---------------------|------------|---------------|
| | | | | H | GL | | | | |
| MBP2ST12L0 | M 12 x 1,5 | Grey | RAL 7035 | 24 | 8 | 15 | 3-6,5 | 3,5 | 100 |
| MBP2ST12G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST12B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST16L0 | M 16 x 1,5 | Grey | RAL 7035 | 28 | 8 | 19 | 4-8 | 5,85 | 100 |
| MBP2ST16G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST16B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST16L1 | M 16 x 1,5 | Grey | RAL 7035 | 29 | 10 | 22 | 5-10 | 8,15 | 100 |
| MBP2ST16G1 | | Grey | RAL 7001 | | | | | | |
| MBP2ST16B1 | | Black | RAL 9005 | | | | | | |
| MBP2ST20L0 | M 20 x 1,5 | Grey | RAL 7035 | 29 | 10 | 24 | 6-12 | 10,35 | 100 |
| MBP2ST20G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST20B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST20L1 | M 20 x 1,5 | Grey | RAL 7035 | 29 | 10 | 24 | 4-10 | 10,55 | 100 |
| MBP2ST20G1 | | Grey | RAL 7001 | | | | | | |
| MBP2ST20B1 | | Black | RAL 9005 | | | | | | |
| MBP2ST20L2 | M 20 x 1,5 | Grey | RAL 7035 | 33 | 10 | 27 | 10-14 | 13,11 | 100 |
| MBP2ST20G2 | | Grey | RAL 7001 | | | | | | |
| MBP2ST20B2 | | Black | RAL 9005 | | | | | | |
| MBP2ST25L0 | M 25 x 1,5 | Grey | RAL 7035 | 38 | 10 | 33 | 13-18 | 21 | 50 |
| MBP2ST25G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST25B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST32L0 | M 32 x 1,5 | Grey | RAL 7035 | 41 | 10 | 42 | 18-25 | 36,4 | 25 |
| MBP2ST32G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST32B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST40L0 | M 40 x 1,5 | Grey | RAL 7035 | 51 | 10 | 53 | 22-32 | 66,45 | 10 |
| MBP2ST40G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST40B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST50L0 | M 50 x 1,5 | Grey | RAL 7035 | 53 | 18 | 60 | 30-38 | 88,11 | 5 |
| MBP2ST50G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST50B0 | | Black | RAL 9005 | | | | | | |
| MBP2ST63L0 | M 63 x 1,5 | Grey | RAL 7035 | 55 | 18 | 70 | 34-44 | 98 | 5 |
| MBP2ST63G0 | | Grey | RAL 7001 | | | | | | |
| MBP2ST63B0 | | Black | RAL 9005 | | | | | | |

| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|---------|----------|-----------------|----|----------|---------------------|------------|---------------|
| | | | | H | GL | | | | |
| MBP1ST07L0 | PG 7 | Grey ● | RAL 7035 | 24 | 8 | 15 | 3-6,5 | 3,6 | 100 |
| MBP1ST07G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST07B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST09L0 | PG 9 | Grey ● | RAL 7035 | 28 | 8 | 19 | 4-8 | 5,8 | 100 |
| MBP1ST09G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST09B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST11L0 | PG 11 | Grey ● | RAL 7035 | 29 | 8 | 22 | 5-10 | 7,8 | 100 |
| MBP1ST11G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST11B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST13L0 | PG 13,5 | Grey ● | RAL 7035 | 29 | 9 | 24 | 6-12 | 9,1 | 100 |
| MBP1ST13G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST13B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST13L1 | PG 13,5 | Grey ● | RAL 7035 | 29 | 9 | 24 | 4-10 | 9,3 | 100 |
| MBP1ST13G1 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST13B1 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST16L0 | PG 16 | Grey ● | RAL 7035 | 33 | 9 | 27 | 10-14 | 12 | 100 |
| MBP1ST16G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST16B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST21L0 | PG 21 | Grey ● | RAL 7035 | 38 | 11 | 33 | 13-18 | 19,6 | 50 |
| MBP1ST21G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST21B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST29L0 | PG 29 | Grey ● | RAL 7035 | 41 | 11 | 42 | 18-25 | 32,7 | 25 |
| MBP1ST29G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST29B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST36L0 | PG 36 | Grey ● | RAL 7035 | 51 | 13 | 53 | 22-32 | 65,5 | 10 |
| MBP1ST36G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST36B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST42L0 | PG 42 | Grey ● | RAL 7035 | 53 | 13 | 60 | 30-38 | 78,3 | 5 |
| MBP1ST42G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST42B0 | | Black ● | RAL 9005 | | | | | | |
| MBP1ST48L0 | PG 48 | Grey ● | RAL 7035 | 55 | 14 | 65 | 34-44 | 89,1 | 5 |
| MBP1ST48G0 | | Grey ● | RAL 7001 | | | | | | |
| MBP1ST48B0 | | Black ● | RAL 9005 | | | | | | |

Dimensions



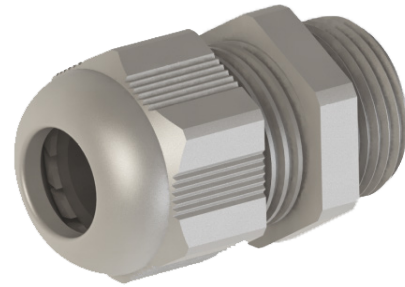
Technical specifications

Material

- Cap nut and gland body: polyamide PA6 V2
- Sealing ring: TPV

Properties

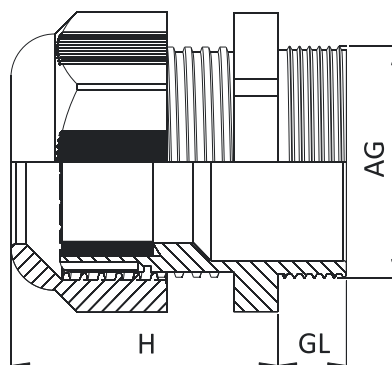
- Connection thread: metric (EN 60423) / PG (DIN 40430)
- Protection class: IP68 at up to 5 bar
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- Vibration resistance
- UV resistance
- Easy to assemble
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) |
|------------|-------------|-------|----------|-----------------|----|----------|---------------------|
| | | | | H | GL | | |
| MBP2LT12L0 | M 12 x 1,5 | Grey | RAL 7035 | 24 | 15 | 15 | 3-6,5 |
| MBP2LT12G0 | | Grey | RAL 7001 | | | | |
| MBP2LT12B0 | | Black | RAL 9005 | | | | |
| MBP2LT16L0 | M 16 x 1,5 | Grey | RAL 7035 | 29 | 15 | 22 | 5-10 |
| MBP2LT16G0 | | Grey | RAL 7001 | | | | |
| MBP2LT16B0 | | Black | RAL 9005 | | | | |
| MBP2LT16L1 | M 16 x 1,5 | Grey | RAL 7035 | 28 | 15 | 19 | 4-8 |
| MBP2LT16G1 | | Grey | RAL 7001 | | | | |
| MBP2LT16B1 | | Black | RAL 9005 | | | | |
| MBP2LT20L0 | M 20 x 1,5 | Grey | RAL 7035 | 29 | 15 | 24 | 6-12 |
| MBP2LT20G0 | | Grey | RAL 7001 | | | | |
| MBP2LT20B0 | | Black | RAL 9005 | | | | |
| MBP2LT20L1 | M 20 x 1,5 | Grey | RAL 7035 | 29 | 15 | 24 | 4-10 |
| MBP2LT20G1 | | Grey | RAL 7001 | | | | |
| MBP2LT20B1 | | Black | RAL 9005 | | | | |
| MBP2LT20L2 | M 20 x 1,5 | Grey | RAL 7035 | 33 | 15 | 27 | 10-14 |
| MBP2LT20G2 | | Grey | RAL 7001 | | | | |
| MBP2LT20B2 | | Black | RAL 9005 | | | | |
| MBP2LT25L0 | M 25 x 1,5 | Grey | RAL 7035 | 38 | 15 | 33 | 13-18 |
| MBP2LT25G0 | | Grey | RAL 7001 | | | | |
| MBP2LT25B0 | | Black | RAL 9005 | | | | |
| MBP2LT32L0 | M 32 x 1,5 | Grey | RAL 7035 | 41 | 18 | 42 | 18-25 |
| MBP2LT32G0 | | Grey | RAL 7001 | | | | |
| MBP2LT32B0 | | Black | RAL 9005 | | | | |
| MBP2LT40L0 | M 40 x 1,5 | Grey | RAL 7035 | 51 | 18 | 53 | 22-32 |
| MBP2LT40G0 | | Grey | RAL 7001 | | | | |
| MBP2LT40B0 | | Black | RAL 9005 | | | | |

| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) |
|------------|-------------|---------|----------|-----------------|----|----------|---------------------|
| | | | | H | GL | | |
| MBP1LT07L0 | PG 7 | Grey ● | RAL 7035 | 24 | 15 | 15 | 3-6,5 |
| MBP1LT07G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT07B0 | | Black ● | RAL 9005 | | | | |
| MBP1LT09L0 | PG 9 | Grey ● | RAL 7035 | 28 | 15 | 19 | 4-8 |
| MBP1LT09G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT09B0 | | Black ● | RAL 9005 | | | | |
| MBP1LT11L0 | PG 11 | Grey ● | RAL 7035 | 29 | 15 | 22 | 5-10 |
| MBP1LT11G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT11B0 | | Black ● | RAL 9005 | | | | |
| MBP1LT11L1 | PG 11 | Grey ● | RAL 7035 | 29 | 10 | 22 | 5-10 |
| MBP1LT11G1 | | Grey ● | RAL 7001 | | | | |
| MBP1LT11B1 | | Black ● | RAL 9005 | | | | |
| MBP1LT13L0 | PG 13,5 | Grey ● | RAL 7035 | 29 | 15 | 24 | 6-12 |
| MBP1LT13G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT13B0 | | Black ● | RAL 9005 | | | | |
| MBP1LT13L1 | PG 13,5 | Grey ● | RAL 7035 | 29 | 15 | 24 | 4-10 |
| MBP1LT13G1 | | Grey ● | RAL 7001 | | | | |
| MBP1LT13B1 | | Black ● | RAL 9005 | | | | |
| MBP1LT16L0 | PG 16 | Grey ● | RAL 7035 | 33 | 15 | 27 | 10-14 |
| MBP1LT16G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT16B0 | | Black ● | RAL 9005 | | | | |
| MBP1LT21L0 | PG 21 | Grey ● | RAL 7035 | 38 | 15 | 33 | 13-18 |
| MBP1LT21G0 | | Grey ● | RAL 7001 | | | | |
| MBP1LT21B0 | | Black ● | RAL 9005 | | | | |

Dimensions



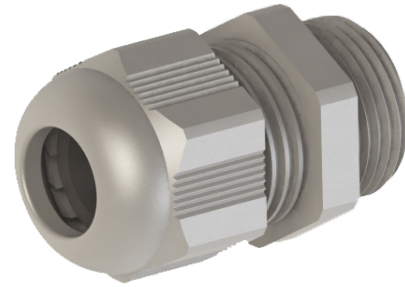
Technical specifications

Material

- Cap nut and gland body: polyamide PA6 V2
- Sealing ring: TPV

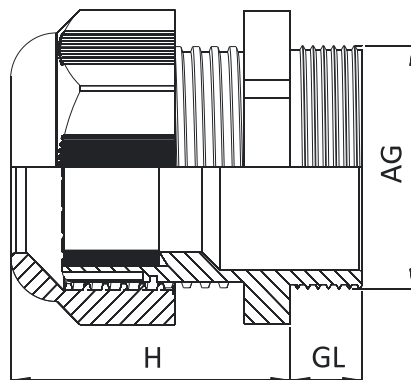
Properties

- Connection thread: metric (EN 60423)
- Protection class: IP68 at up to 5 bar
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- For wide range of cables
- Vibration resistance
- UV resistance
- Easy to assemble
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----------|---------------------|------------|---------------|
| | | | | H | GL | | | | |
| MBP2EM25L0 | M 25 x 1,5 | Grey | RAL 7035 | 35 | 10 | 29 | 11-17 | 14 | 50 |
| MBP2EM25L1 | M 25 x 1,5 | Grey | RAL 7035 | 35 | 10 | 29 | 9-14 | 15 | 50 |
| MBP2EM32L0 | M 32 x 1,5 | Grey | RAL 7035 | 40 | 10 | 36 | 15-21 | 24 | 30 |
| MBP2EM40L0 | M 40 x 1,5 | Grey | RAL 7035 | 43 | 10 | 46 | 19-28 | 40 | 20 |

Dimensions



Technical specifications

Material

- Cap nut and gland body: polyamide PA6 V2
- Sealing ring: TPV special seal for bend resistance

Properties

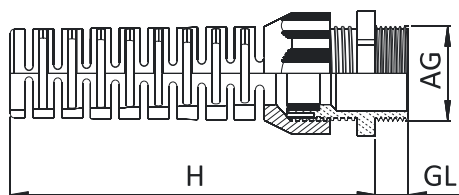
- Connection thread: metric (EN 60423) / PG (DIN 40430)
- Protection class: IP68 at up to 5 bar
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- With spiral top for bend protection
- For highly movable flexible cables
- Vibration resistance
- UV resistance
- Easy to assemble
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----------|---------------------|------------|---------------|
| | | | | H | GL | | | | |
| MBP2BR12L0 | M 12 x 1,5 | Grey | RAL 7035 | 57 | 8 | 15 | 3-6,5 | 4,4 | 100 |
| MBP2BR16L0 | M 16 x 1,5 | Grey | RAL 7035 | 70 | 8 | 19 | 4-8 | 7,8 | 100 |
| MBP2BR16L1 | M 16 x 1,5 | Grey | RAL 7035 | 81 | 10 | 22 | 5-10 | 11,3 | 50 |
| MBP2BR20L0 | M 20 x 1,5 | Grey | RAL 7035 | 89 | 10 | 24 | 6-12 | 14,9 | 50 |
| MBP2BR20L1 | M 20 x 1,5 | Grey | RAL 7035 | 107 | 10 | 27 | 10-14 | 20,1 | 50 |
| MBP2BR25L0 | M 25 x 1,5 | Grey | RAL 7035 | 124 | 10 | 33 | 13-18 | 34,8 | 25 |

| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----------|---------------------|------------|---------------|
| | | | | H | GL | | | | |
| MBP1BR07L0 | PG 7 | Grey | RAL 7035 | 57 | 8 | 15 | 3-6,5 | 4,2 | 100 |
| MBP1BR09L0 | PG 9 | Grey | RAL 7035 | 70 | 8 | 19 | 4-8 | 7,4 | 100 |
| MBP1BR11L0 | PG 11 | Grey | RAL 7035 | 81 | 8 | 22 | 5-10 | 10,8 | 50 |
| MBP1BR13L0 | PG 13,5 | Grey | RAL 7035 | 89 | 9 | 24 | 6-12 | 14 | 50 |
| MBP1BR16L0 | PG 16 | Grey | RAL 7035 | 107 | 9 | 27 | 10-14 | 20,5 | 50 |
| MBP1BR21L0 | PG 21 | Grey | RAL 7035 | 124 | 11 | 33 | 13-18 | 33,7 | 25 |

Dimensions



Technical specifications

Material

- Blind stop: polyamide PA6 V2
- Sealing ring: NBR (on request)

Properties

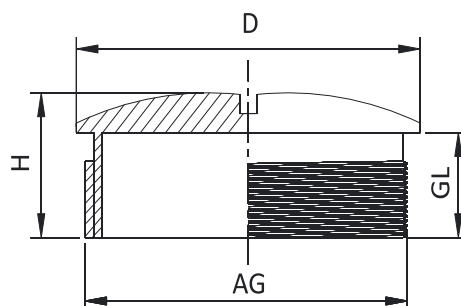
- For unused threaded holes
- Connection thread: metric (EN 60423) / PG (DIN 40430)
- Protection class: IP54 / IP68 (with o-ring)
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- UV resistance
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----|------------|---------------|
| | | | | H | GL | D | | |
| MBP2BS12L0 | M 12 x 1,5 | Grey | RAL 7035 | 8,5 | 6 | 15 | 0,66 | 1000 |
| MBP2BS16L0 | M 16 x 1,5 | Grey | RAL 7035 | 10 | 7 | 20 | 1,27 | 1000 |
| MBP2BS20L0 | M 20 x 1,5 | Grey | RAL 7035 | 10 | 7 | 24 | 1,75 | 500 |
| MBP2BS25L0 | M 25 x 1,5 | Grey | RAL 7035 | 14 | 10 | 30 | 3,55 | 300 |
| MBP2BS32L0 | M 32 x 1,5 | Grey | RAL 7035 | 14 | 10 | 37 | 4,85 | 200 |
| MBP2BS40L0 | M 40 x 1,5 | Grey | RAL 7035 | 15 | 10 | 48 | 9,11 | 100 |

| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----|------------|---------------|
| | | | | H | GL | D | | |
| MBP1BS07L0 | PG 7 | Grey | RAL 7035 | 8 | 6 | 15 | 0,66 | 1000 |
| MBP1BS09L0 | PG 9 | Grey | RAL 7035 | 8,2 | 6 | 19 | 0,9 | 1000 |
| MBP1BS11L0 | PG 11 | Grey | RAL 7035 | 8,5 | 6 | 22 | 1,27 | 500 |
| MBP1BS13L0 | PG 13,5 | Grey | RAL 7035 | 8,5 | 6 | 25 | 1,44 | 500 |
| MBP1BS16L0 | PG 16 | Grey | RAL 7035 | 8,5 | 6 | 27 | 1,75 | 500 |
| MBP1BS21L0 | PG 21 | Grey | RAL 7035 | 12 | 8 | 33 | 3,55 | 300 |
| MBP1BS29L0 | PG 29 | Grey | RAL 7035 | 11,3 | 8 | 44 | 4,85 | 200 |
| MBP1BS36L0 | PG 36 | Grey | RAL 7035 | 14,3 | 10 | 55 | 9,11 | 100 |

Dimensions



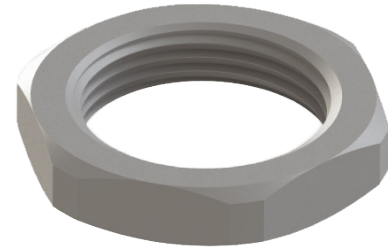
Technical specifications

Material

- Hexagonal lock nut: polyamide PA6 V2 + 30% GF
- Connection thread: metric (EN 60423) / PG (DIN 40430)

Properties

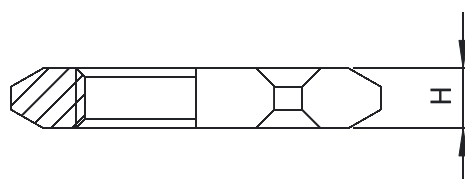
- For tightening of cable glands
- Temperature range: -20 °C +100 °C; -30 °C +150 °C (short term)
- UV resistance
- Halogen free



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Weight (g) | Package (pcs) |
|------------|-------------|---------|----------|-----------------|----------|------------|---------------|
| | | | | H | Hex (mm) | | |
| MBP2LS12L0 | M 12 x 1,5 | Grey ● | RAL 7035 | 5 | 18 | 1,05 | 1000 |
| MBP2LS12G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS12B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS16L0 | M 16 x 1,5 | Grey ● | RAL 7035 | 5 | 22 | 1,3 | 1000 |
| MBP2LS16G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS16B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS20L0 | M 20 x 1,5 | Grey ● | RAL 7035 | 6 | 26 | 2 | 500 |
| MBP2LS20G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS20B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS25L0 | M 25 x 1,5 | Grey ● | RAL 7035 | 6 | 32 | 3 | 500 |
| MBP2LS25G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS25B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS32L0 | M 32 x 1,5 | Grey ● | RAL 7035 | 7 | 41 | 5,86 | 200 |
| MBP2LS32G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS32B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS40L0 | M 40 x 1,5 | Grey ● | RAL 7035 | 7 | 50 | 11 | 100 |
| MBP2LS40G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS40B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS50L0 | M 50 x 1,5 | Grey ● | RAL 7035 | 8 | 60 | 13 | 75 |
| MBP2LS50G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS50B0 | | Black ● | RAL 9005 | | | | |
| MBP2LS63L0 | M 63 x 1,5 | Grey ● | RAL 7035 | 8 | 75 | 17,5 | 50 |
| MBP2LS63G0 | | Grey ● | RAL 7001 | | | | |
| MBP2LS63B0 | | Black ● | RAL 9005 | | | | |

| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----------|------------|---------------|
| | | | | H | Hex (mm) | | |
| MBP1LS07L0 | PG 7 | Grey | RAL 7035 | 5 | 19 | 1,2 | 1000 |
| MBP1LS07G0 | | Grey | RAL 7001 | | | | |
| MBP1LS07B0 | | Black | RAL 9005 | | | | |
| MBP1LS09L0 | PG 9 | Grey | RAL 7035 | 5 | 22 | 1,2 | 1000 |
| MBP1LS09G0 | | Grey | RAL 7001 | | | | |
| MBP1LS09B0 | | Black | RAL 9005 | | | | |
| MBP1LS09L1 | PG 9 | Grey | RAL 7035 | 5 | 19 | 1,2 | 1000 |
| MBP1LS09G1 | | Grey | RAL 7001 | | | | |
| MBP1LS09B1 | | Black | RAL 9005 | | | | |
| MBP1LS11L0 | PG 11 | Grey | RAL 7035 | 5 | 24 | 1,5 | 1000 |
| MBP1LS11G0 | | Grey | RAL 7001 | | | | |
| MBP1LS11B0 | | Black | RAL 9005 | | | | |
| MBP1LS13L0 | PG 13,5 | Grey | RAL 7035 | 6 | 27 | 2,37 | 500 |
| MBP1LS13G0 | | Grey | RAL 7001 | | | | |
| MBP1LS13B0 | | Black | RAL 9005 | | | | |
| MBP1LS16L0 | PG 16 | Grey | RAL 7035 | 6 | 30 | 3 | 500 |
| MBP1LS16G0 | | Grey | RAL 7001 | | | | |
| MBP1LS16B0 | | Black | RAL 9005 | | | | |
| MBP1LS21L0 | PG 21 | Grey | RAL 7035 | 7 | 36 | 4,5 | 250 |
| MBP1LS21G0 | | Grey | RAL 7001 | | | | |
| MBP1LS21B0 | | Black | RAL 9005 | | | | |
| MBP1LS29L0 | PG 29 | Grey | RAL 7035 | 7 | 46 | 6,21 | 200 |
| MBP1LS29G0 | | Grey | RAL 7001 | | | | |
| MBP1LS29B0 | | Black | RAL 9005 | | | | |
| MBP1LS36L0 | PG 36 | Grey | RAL 7035 | 8 | 60 | 14 | 100 |
| MBP1LS36G0 | | Grey | RAL 7001 | | | | |
| MBP1LS36B0 | | Black | RAL 9005 | | | | |
| MBP1LS42L0 | PG 42 | Grey | RAL 7035 | 8 | 65 | 15 | 50 |
| MBP1LS42G0 | | Grey | RAL 7001 | | | | |
| MBP1LS42B0 | | Black | RAL 9005 | | | | |
| MBP1LS48L0 | PG 48 | Grey | RAL 7035 | 8 | 70 | 18 | 50 |
| MBP1LS48G0 | | Grey | RAL 7001 | | | | |
| MBP1LS48B0 | | Black | RAL 9005 | | | | |

Dimensions



Technical specifications

Material

- Polyamide PA6
- Temperature range: -20 °C +100 °C



| Order code | PG Thread | M Thread | Color | Shade |
|------------|-----------|------------|---------|----------|
| MBP0PT07B0 | PG 7 | M 12 x 1,5 | Black ● | RAL 9005 |
| MBP0PT09B0 | PG 9 | M 16 x 1,5 | Black ● | RAL 9005 |
| MBP0PT11B0 | PG 11 | M 16 x 1,5 | Black ● | RAL 9005 |
| MBP0PT13B0 | PG 13,5 | M 20 x 1,5 | Black ● | RAL 9005 |
| MBP0PT16B0 | PG 16 | M 20 x 1,5 | Black ● | RAL 9005 |
| MBP0PT21B0 | PG 21 | M 25 x 1,5 | Black ● | RAL 9005 |
| MBP0PT29B0 | PG 29 | M 32 x 1,5 | Black ● | RAL 9005 |
| MBP0PT36B0 | PG 36 | M 40 x 1,5 | Black ● | RAL 9005 |
| MBP0PT42B0 | PG 42 | M 50 x 1,5 | Black ● | RAL 9005 |
| MBP0PT48B0 | PG 48 | M 63 x 1,5 | Black ● | RAL 9005 |

*NB! The gland sizes are given for plastic cable glands. In case of using metal cable glands, the protection tap has to be **one size smaller** than indicated above!*

Metal cable glands

| IP68

| Brass, stainless steel, EMC

| Vibration- and UV-resistant

| Heavy duty

| Easy to assemble



Technical specifications

Material

- Cap nut and gland body: nickel-plated brass
- Clamping insert: polyamide PA6 V2
- Sealing ring: TPV
- O-ring: NBR

Properties

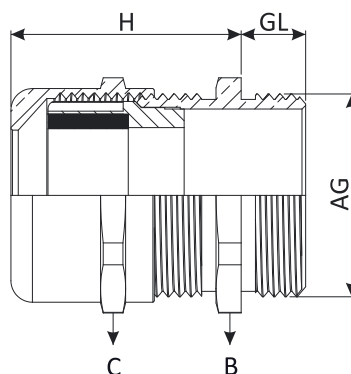
- Connection thread: metric (EN 60423) / PG (DIN 40430)
- Protection class: IP68 at up to 5 bar
- Temperature range: -20 °C +100 °C;
-40 °C +150 °C (short term)
- Easy to assemble
- Long thread versions available
- High strain relief



| Order code | Thread (AG) | Dimensions (mm) | | Hex B (mm) | Hex C (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----|------------|------------|---------------------|------------|---------------|
| | | H | GL | | | | | |
| MBM2ST12E0 | M 12 x 1,5 | 22 | 6 | 14 | 14 | 3-6,5 | 12 | 100 |
| MBM2ST16E0 | M 16 x 1,5 | 23 | 7 | 18 | 17 | 4-8 | 18,4 | 50 |
| MBM2ST20E0 | M 20 x 1,5 | 26,5 | 8 | 22 | 22 | 6-12 | 29,2 | 50 |
| MBM2ST20E1 | M 20 x 1,5 | 26,5 | 8 | 22 | 22 | 4-10 | 30,05 | 50 |
| MBM2ST25E0 | M 25 x 1,5 | 28 | 8 | 27 | 24 | 10-14 | 36 | 25 |
| MBM2ST32E0 | M 32 x 1,5 | 31,5 | 9 | 34 | 30 | 13-18 | 67 | 20 |
| MBM2ST40E0 | M 40 x 1,5 | 38 | 9 | 43 | 40 | 18-25 | 138,6 | 10 |
| MBM2ST50E0 | M 50 x 1,5 | 43 | 9 | 55 | 50 | 22-32 | 231,4 | 5 |
| MBM2ST63E0 | M 63 x 1,5 | 48 | 14 | 68 | 64 | 33-44 | 414,4 | 5 |

| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|-----|----------|---------------------|------------|---------------|
| | | H | GL | | | | |
| MBM1ST07E0 | PG 7 | 22 | 6 | 14 | 3-6,5 | 11,8 | 100 |
| MBM1ST09E0 | PG 9 | 23 | 6 | 17 | 4-8 | 16,6 | 50 |
| MBM1ST11E0 | PG 11 | 24,5 | 6 | 20 | 5-10 | 23,2 | 50 |
| MBM1ST13E0 | PG 13,5 | 26,5 | 6,5 | 22 | 6-12 | 29,6 | 50 |
| MBM1ST13E1 | PG 13,5 | 26,5 | 6,5 | 22 | 4-10 | 29,8 | 50 |
| MBM1ST16E0 | PG 16 | 28 | 6,5 | 24 | 10-14 | 31,6 | 50 |
| MBM1ST21E0 | PG 21 | 31,5 | 7 | 30 | 13-18 | 55 | 25 |
| MBM1ST29E0 | PG 29 | 38 | 8 | 40 | 18-25 | 115,6 | 20 |
| MBM1ST36E0 | PG 36 | 43 | 10 | 50 | 22-32 | 198,4 | 10 |
| MBM1ST42E0 | PG 42 | 47 | 12 | 57 | 30-38 | 231,8 | 5 |
| MBM1ST48E0 | PG 48 | 48 | 14 | 64 | 33-44 | 344,8 | 5 |

Dimensions



Technical specifications

Material

- Cap nut and gland body: stainless steel (1.4305 / AISI303-1.4404 / AISI316L)
- Clamping insert: polyamide PA6 V2
- Sealing ring: TPV
- O-ring: NBR

Properties

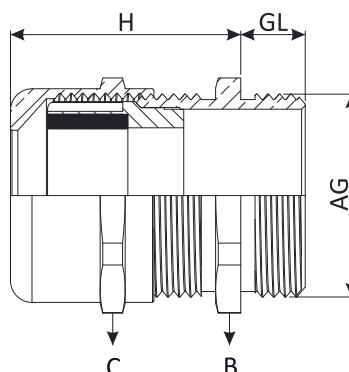
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Protection class: IP68 - 5 bar
- Temperature range: -20 °C +100 °C; -40 °C +150 °C (short term)
- High corrosion resistance
- Smooth surfaces
- Easy to assemble
- Food, pharmaceutical industry and on-/offshore applications



| Order code | Thread (AG) | Dimensions (mm) | | Hex B (mm) | Hex C (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----|------------|------------|---------------------|------------|---------------|
| | | H | GL | | | | | |
| MBS2ST12E0 | M 12 x 1,5 | 22 | 6 | 14 | 14 | 3-6,5 | 12,5 | 100 |
| MBS2ST16E0 | M 16 x 1,5 | 23 | 7 | 18 | 17 | 4-8 | 18,5 | 50 |
| MBS2ST20E0 | M 20 x 1,5 | 26,5 | 8 | 22 | 22 | 6-12 | 26 | 50 |
| MBS2ST20E1 | M 20 x 1,5 | 26,5 | 8 | 22 | 22 | 4-10 | 26,2 | 50 |
| MBS2ST25E0 | M 25 x 1,5 | 28 | 8 | 27 | 24 | 10-14 | 41 | 25 |
| MBS2ST32E0 | M 32 x 1,5 | 31,5 | 9 | 36 | 30 | 13-18 | 70 | 20 |
| MBS2ST40E0 | M 40 x 1,5 | 38 | 9 | 46 | 41 | 18-25 | 144,5 | 10 |
| MBS2ST50E0 | M 50 x 1,5 | 43 | 9 | 55 | 50 | 22-32 | 255 | 5 |
| MBS2ST63E0 | M 63 x 1,5 | 48 | 14 | 70 | 65 | 33-44 | 395,6 | 5 |

| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|-----|----------|---------------------|------------|---------------|
| | | H | GL | | | | |
| MBS1ST07E0 | PG 7 | 22 | 6 | 14 | 3-6,5 | 12,5 | 100 |
| MBS1ST09E0 | PG 9 | 23 | 6 | 17 | 4-8 | 16,6 | 50 |
| MBS1ST11E0 | PG 11 | 24,5 | 6 | 22 | 5-10 | 23,2 | 50 |
| MBS1ST13E0 | PG 13,5 | 26,5 | 6,5 | 22 | 6-12 | 29,6 | 50 |
| MBS1ST13E1 | PG 13,5 | 26,5 | 6,5 | 22 | 4-10 | 29,8 | 50 |
| MBS1ST16E0 | PG 16 | 28 | 6,5 | 24 | 10-14 | 31,6 | 50 |
| MBS1ST21E0 | PG 21 | 31,5 | 7 | 30 | 13-18 | 55 | 25 |
| MBS1ST29E0 | PG 29 | 38 | 8 | 41 | 18-25 | 115,6 | 20 |
| MBS1ST36E0 | PG 36 | 43 | 10 | 50 | 22-32 | 145 | 10 |
| MBS1ST42E0 | PG 42 | 47 | 12 | 60 | 30-38 | 255 | 5 |
| MBS1ST48E0 | PG 48 | 48 | 14 | 65 | 33-34 | 345 | 5 |

Dimensions



Technical specifications

Material

- Cap nut and gland body: nickel-plated brass
- Sealing ring: TPV / silicone / EPDM
- O-ring: NBR / TPV / silicone / EPDM

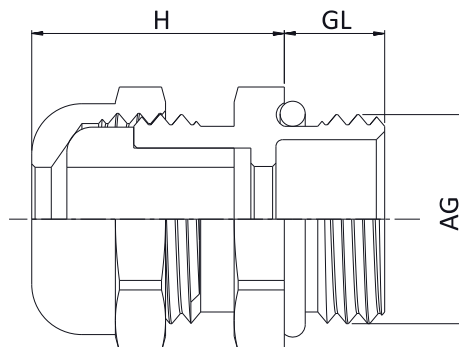
Properties

- Connection thread: metric (EN60423) / PG (DIN 40430)
- Protection class: IP68 at up to 3 bar
- Temperature range: -20 °C +100 °C;
-40 °C +150 °C
- Easy to assemble
- Long thread versions available
- Lighting industry



| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Package (pcs) |
|------------|-------------|-----------------|----|----------|---------------------|---------------|
| | | H | GL | | | |
| MBM2MI06E0 | M 6 x 1,0 | 10,5 | 6 | 8 | 2-3 | 100 |
| MBM2MI08E0 | M 8 x 1,25 | 15 | 6 | 14 | 2-4 | 100 |
| MBM2MI08E1 | M 8 x 1,25 | 15 | 6 | 11 | 3-5 | 100 |
| MBM2MI10E0 | M 10 x 1,5 | 15 | 6 | 14 | 2-4 | 100 |
| MBM2MI10E1 | M 10 x 1,5 | 15 | 6 | 14 | 3-6 | 100 |
| MBM2MI10E2 | M 10 x 1,5 | 14,5 | 6 | 12 | 4-6 | 100 |
| MBM2MI12E0 | M 12 x 1,5 | 15 | 6 | 14 | 2-4 | 100 |
| MBM2MI12E1 | M 12 x 1,5 | 15 | 6 | 14 | 3-6 | 100 |
| MBM1MI07E0 | PG 7 | 15 | 6 | 14 | 2-4 | 100 |
| MBM1MI07E1 | PG 7 | 15 | 6 | 14 | 3-6 | 100 |
| MBM1MI09E0 | PG 9 | 16,5 | 6 | 17 | 4-6 | 100 |
| MBM1MI09E1 | PG 9 | 16,5 | 6 | 17 | 6-8 | 100 |

Dimensions



Technical specifications

Material

- Cap nut and gland body: nickel-plated brass
- Clamping insert: polyamide PA6 V2
- Sealing ring: TPV
- EMC spring: AISI301
- O-ring: NBR

Properties

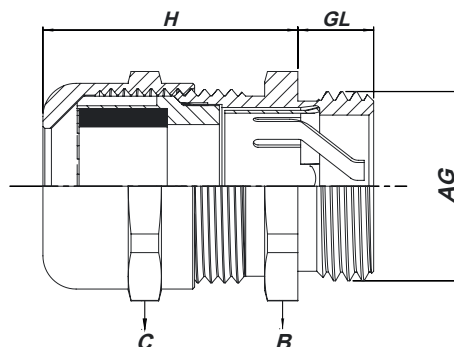
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Protection class: IP68 - 5 bar
- Temperature range: -20 °C +100 °C;
-40 °C +150 °C
- Easy to assemble
- For cables with shielding
- Suitable for cables with and without inner sheath
- Highly conductive



| Order code | Thread (AG) | Dimensions (mm) | | Hex B (mm) | Hex C (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----|------------|------------|---------------------|------------|---------------|
| | | H | GL | | | | | |
| MBM2EC12E0 | M 12 x 1,5 | 22 | 6 | 14 | 14 | 3-6,5 | 12,5 | 100 |
| MBM2EC16E0 | M 16 x 1,5 | 23 | 7 | 18 | 17 | 4-8 | 18,5 | 50 |
| MBM2EC20E0 | M 20 x 1,5 | 26,5 | 8 | 22 | 22 | 6-12 | 26,5 | 50 |
| MBM2EC25E0 | M 25 x 1,5 | 28 | 8 | 27 | 24 | 10-14 | 42 | 25 |
| MBM2EC32E0 | M 32 x 1,5 | 32,5 | 9 | 34 | 30 | 13-18 | 72,5 | 20 |
| MBM2EC40E0 | M 40 x 1,5 | 38 | 9 | 43 | 40 | 18-25 | 144,5 | 10 |
| MBM2EC50E0 | M 50 x 1,5 | 48 | 9 | 55 | 50 | 22-32 | 255 | 5 |
| MBM2EC63E0 | M 63 x 1,5 | 53 | 14 | 68 | 64 | 34-44 | 395,5 | 5 |

| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|-----|----------|---------------------|------------|---------------|
| | | H | GL | | | | |
| MBM1EC07E0 | PG 7 | 22 | 6 | 14 | 3-6,5 | 16,5 | 100 |
| MBM1EC09E0 | PG 9 | 23 | 6 | 17 | 4-8 | 18,5 | 50 |
| MBM1EC11E0 | PG 11 | 26 | 6 | 20 | 5-10 | 25 | 50 |
| MBM1EC13E0 | PG 13,5 | 26,5 | 6,5 | 22 | 6-12 | 30 | 50 |
| MBM1EC16E0 | PG 16 | 28 | 6,5 | 24 | 10-14 | 37 | 50 |
| MBM1EC21E0 | PG 21 | 32,5 | 7 | 30 | 13-18 | 62,5 | 25 |
| MBM1EC29E0 | PG 29 | 38 | 8 | 40 | 18-25 | 128 | 20 |
| MBM1EC36E0 | PG 36 | 48 | 9 | 50 | 22-32 | 232,5 | 10 |
| MBM1EC42E0 | PG 42 | 48 | 12 | 58 | 30-38 | 252,5 | 5 |
| MBM1EC48E0 | PG 48 | 52 | 14 | 64 | 34-44 | 355 | 5 |

Dimensions



Technical specifications

Material

- Cap nut and gland body: nickel-plated brass
- Sealing ring: EPDM
- O-ring: NBR - TPV

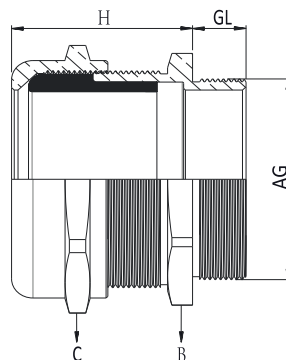
Properties

- Connection thread: metric (EN60423)
- Protection class: IP68
- Temperature range: -20 °C +100 °C;
-40 °C +150 °C
- High impact and temperature resistance
- Easy to assemble
- Wide cable range
- XL cables



| Order code | Thread (AG) | Dimensions (mm) | | Hex B (mm) | Hex C (mm) | Cable diameter (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----|------------|------------|---------------------|------------|---------------|
| | | H | GL | | | | | |
| MBM2XL63E0 | M 63 x 1,5 | 48 | 15 | 70 | 75 | 45-55 | 515 | 5 |
| MBM2XL75E0 | M 75 x 1,5 | 48 | 20 | 85 | 75 | 45-55 | 700 | 2 |
| MBM2XL75E1 | M 75 x 1,5 | 58 | 20 | 90 | 90 | 50-63 | 700 | 2 |
| MBM2XL80E0 | M 80 x 2,0 | 58 | 20 | 90 | 90 | 50-63 | 870 | 2 |
| MBM2XL90E0 | M 90 x 2,0 | 61 | 20 | 100 | 100 | 60-70 | 1109 | 2 |
| MBM3XL21E0 | 2 ½" | 48 | 20 | 85 | 75 | 45-55 | 590,2 | 2 |
| MBM3XL21E1 | 2 ½" | 58 | 20 | 90 | 90 | 50-63 | 950 | 2 |
| MBM3XL30E0 | 3" | 61 | 20 | 100 | 100 | 60-70 | 1093,4 | 2 |

Dimensions



Technical specifications

Material

- Screw plug: nickel-plated brass
- Sealing ring: NBR

Properties

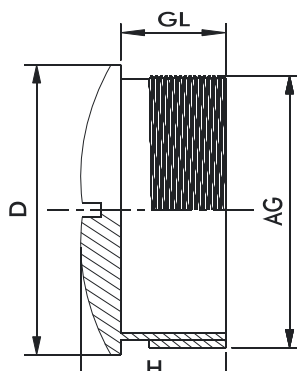
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Protection class: IP68
- Temperature range: -40 °C +100 °C
- For unused threaded holes
- Assembly with a screwdriver
- Machine and equipment manufacturing
- Electric motor manufacturing



| Order code | Thread (AG) | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|-----|----|------------|---------------|
| | | H | GL | D | | |
| MBM2BS12E0 | M 12 x 1,5 | 7,5 | 5 | 14 | 4,5 | 100 |
| MBM2BS16E0 | M 16 x 1,5 | 8 | 5 | 18 | 5,3 | 50 |
| MBM2BS20E0 | M 20 x 1,5 | 9,5 | 6,5 | 22 | 14,5 | 50 |
| MBM2BS25E0 | M 25 x 1,5 | 11 | 7 | 28 | 17 | 25 |
| MBM2BS32E0 | M 32 x 1,5 | 12 | 8 | 35 | 24,6 | 20 |
| MBM2BS40E0 | M 40 x 1,5 | 13 | 8,5 | 44 | 40,4 | 10 |
| MBM2BS50E0 | M 50 x 1,5 | 15 | 9 | 54 | 56,2 | 10 |
| MBM2BS63E0 | M 63 x 1,5 | 16 | 10 | 67 | 102,6 | 5 |

| Order code | Thread (AG) | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|-----|----|------------|---------------|
| | | H | GL | D | | |
| MBM1BS07E0 | PG 7 | 8 | 5 | 14 | 3,7 | 100 |
| MBM1BS09E0 | PG 9 | 9 | 6 | 17 | 5,4 | 50 |
| MBM1BS11E0 | PG 11 | 9 | 6 | 20 | 7,9 | 50 |
| MBM1BS13E0 | PG 13,5 | 9,5 | 6,5 | 22 | 9,8 | 50 |
| MBM1BS16E0 | PG 16 | 9,5 | 6,5 | 24 | 15 | 50 |
| MBM1BS21E0 | PG 21 | 11 | 7 | 30 | 18,9 | 25 |
| MBM1BS29E0 | PG 29 | 12 | 8 | 39 | 69,4 | 20 |
| MBM1BS36E0 | PG 36 | 15 | 9 | 50 | 62,5 | 10 |
| MBM1BS42E0 | PG 42 | 16 | 10 | 57 | 86,1 | 5 |
| MBM1BS48E0 | PG 48 | 16 | 10 | 64 | 96,6 | 5 |

Dimensions



Technical specifications

Material

- Hexagonal locknut: nickel-plated brass
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Temperature range: -60 °C +200 °C

Properties

- For tightening of cable glands



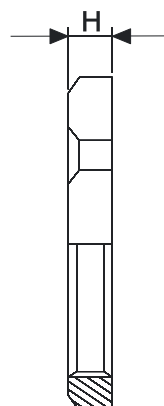
Dimensions (mm)

| Order code | Thread (AG) | H | Hex (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----|----------|------------|---------------|
| MBM2LS12E0 | M 12 x 1,5 | 2,8 | 15 | 1,6 | 100 |
| MBM2LS16E0 | M 16 x 1,5 | 3 | 19 | 3 | 50 |
| MBM2LS20E0 | M 20 x 1,5 | 3,5 | 24 | 5,4 | 50 |
| MBM2LS25E0 | M 25 x 1,5 | 3,5 | 30 | 8,2 | 25 |
| MBM2LS32E0 | M 32 x 1,5 | 4 | 36 | 10,6 | 20 |
| MBM2LS40E0 | M 40 x 1,5 | 4 | 45 | 16,4 | 10 |
| MBM2LS50E0 | M 50 x 1,5 | 5 | 55 | 26,8 | 5 |
| MBM2LS63E0 | M 63 x 1,5 | 5 | 68 | 37 | 5 |

Dimensions (mm)

| Order code | Thread (AG) | H | Hex (mm) | Weight (g) | Package (pcs) |
|------------|-------------|-----|----------|------------|---------------|
| MBM1LS07E0 | PG 7 | 2,8 | 15 | 1,8 | 100 |
| MBM1LS09E0 | PG 9 | 2,8 | 18 | 2,2 | 50 |
| MBM1LS11E0 | PG 11 | 3 | 21 | 2,8 | 50 |
| MBM1LS13E0 | PG 13,5 | 3 | 23 | 3,4 | 50 |
| MBM1LS16E0 | PG 16 | 3 | 26 | 4,4 | 50 |
| MBM1LS21E0 | PG 21 | 3,5 | 32 | 7,4 | 25 |
| MBM1LS29E0 | PG 29 | 4 | 40 | 10,2 | 20 |
| MBM1LS36E0 | PG 36 | 5 | 50 | 17,2 | 10 |
| MBM1LS42E0 | PG 42 | 5 | 60 | 32,6 | 5 |
| MBM1LS48E0 | PG 48 | 5,5 | 64 | 35,8 | 5 |

Dimensions



Technical specifications

Material

- Hexagonal locknut: stainless steel AISI303 / AISI316L
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Temperature range: -60 °C +200 °C

Properties

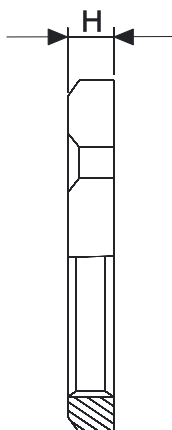
- For tightening of stainless steel cable glands



| Order code | Thread (AG) | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----------|--|------------|---------------|
| | | H | Hex (mm) | | | |
| MBS2LS12E0 | M 12 x 1,5 | 2,8 | 15 | | 2 | 100 |
| MBS2LS16E0 | M 16 x 1,5 | 3 | 19 | | 4 | 50 |
| MBS2LS20E0 | M 20 x 1,5 | 3,5 | 24 | | 5 | 50 |
| MBS2LS25E0 | M 25 x 1,5 | 3,5 | 30 | | 8,5 | 25 |
| MBS2LS32E0 | M 32 x 1,5 | 4 | 36 | | 12 | 20 |
| MBS2LS40E0 | M 40 x 1,5 | 4 | 46 | | 17 | 10 |
| MBS2LS50E0 | M 50 x 1,5 | 5 | 55 | | 28 | 5 |
| MBS2LS63E0 | M 63 x 1,5 | 5 | 70 | | 37 | 5 |

| Order code | Thread (AG) | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|-------------|-----------------|----------|--|------------|---------------|
| | | H | Hex (mm) | | | |
| MBS1LS07E0 | PG 7 | 2,8 | 15 | | 2 | 100 |
| MBS1LS09E0 | PG 9 | 2,8 | 18 | | 3 | 50 |
| MBS1LS11E0 | PG 11 | 3 | 22 | | 4 | 50 |
| MBS1LS13E0 | PG 13,5 | 3 | 24 | | 5 | 50 |
| MBS1LS16E0 | PG 16 | 3 | 27 | | 7 | 50 |
| MBS1LS21E0 | PG 21 | 3,5 | 32 | | 8,5 | 25 |
| MBS1LS29E0 | PG 29 | 4 | 41 | | 10,2 | 20 |
| MBS1LS36E0 | PG 36 | 5 | 50 | | 10 | 17 |
| MBS1LS42E0 | PG 42 | 5 | 60 | | 28 | 5 |
| MBS1LS48E0 | PG 48 | 5,5 | 65 | | 35 | 5 |

Dimensions



Technical specifications

Material

- Hexagonal locknut: nickel-plated brass;
- Stainless steel AISI303 / AISI316L
- Connection thread: metric (EN60423) / PG (DIN 40430)
- Temperature range: -60 °C +200 °C

Properties

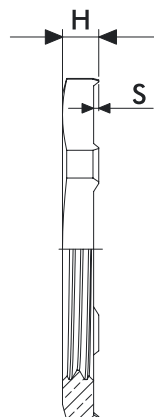
- For tightening of EMC cable glands



| Order code Brass | Thread (AG) | Dimensions (mm) | | Hex (mm) | Weight (g) | Package (pcs) |
|---------------------|-------------|-----------------|-----|----------|------------|---------------|
| | | H | S | | | |
| MBM2LS12E1 | M 12 x 1,5 | 3,3 | 0,5 | 15 | 3 | 100 |
| MBM2LS16E1 | M 16 x 1,5 | 3,5 | 0,5 | 19 | 4 | 50 |
| MBM2LS20E1 | M 20 x 1,5 | 3,5 | 0,5 | 24 | 5 | 50 |
| MBM2LS25E1 | M 25 x 1,5 | 3,5 | 0,5 | 30 | 8,5 | 25 |
| MBM2LS32E1 | M 32 x 1,5 | 4,0 | 0,5 | 36 | 11 | 20 |
| MBM2LS40E1 | M 40 x 1,5 | 4,6 | 0,6 | 45 | 17 | 10 |
| MBM2LS50E1 | M 50 x 1,5 | 5,6 | 0,6 | 55 | 28 | 5 |
| MBM2LS63E1 | M 63 x 1,5 | 6,7 | 0,7 | 70 | 37 | 5 |
| MBM2LS75E1 | M 75 x 1,5 | 8,0 | 1,0 | 85 | 109 | 5 |

| Order code Brass | Thread (AG) | Dimensions (mm) | | Hex (mm) | Weight (g) | Package (pcs) |
|---------------------|-------------|-----------------|-----|----------|------------|---------------|
| | | H | S | | | |
| MBS1LS07E1 | PG 7 | 3,3 | 0,5 | 15 | 3 | 100 |
| MBS1LS09E1 | PG 9 | 3,3 | 0,5 | 18 | 4 | 50 |
| MBS1LS11E1 | PG 11 | 3,5 | 0,5 | 21 | 5 | 50 |
| MBS1LS13E1 | PG 13,5 | 3,5 | 0,5 | 23 | 8 | 50 |
| MBS1LS16E1 | PG 16 | 3,5 | 0,5 | 26 | 11 | 50 |
| MBS1LS21E1 | PG 21 | 4,0 | 0,5 | 32 | 15 | 25 |
| MBS1LS29E1 | PG 29 | 4,6 | 0,6 | 40 | 19 | 20 |
| MBS1LS36E1 | PG 36 | 5,6 | 0,6 | 50 | 28 | 10 |
| MBS1LS42E1 | PG 42 | 5,6 | 0,6 | 60 | 37 | 5 |
| MBS1LS48E1 | PG 48 | 6,1 | 0,6 | 65 | 45 | 5 |

Dimensions



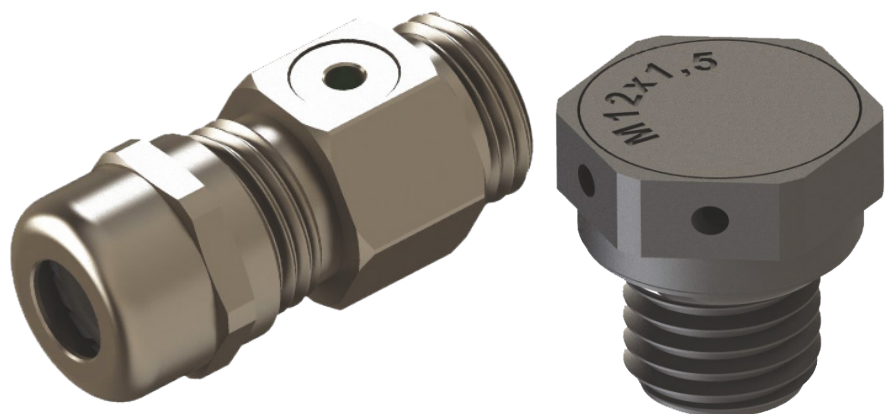
Ventilation glands

| IP68

| Polyamide, brass,
stainless steel

| Prevents corrosion from
condensation

| Vibration- and UV-resistant



Technical specifications

Material

- Cap nut and gland body: nickel-plated brass, stainless steel (AISI303 / 316L)
- Sealing ring: TPV
- Cable holder: polyamide PA6 V2
- O-ring: NBR / EPDM
- Vent membrane: acrylic co-polymer on nylon support (hydrophobic-oleophobic)

Properties

- Connection thread: metric (EN 60423), PG (DIN 40430)
- Protection class: IP68
- Temperature range: -20 °C +100 °C; -30 +150 °C (short term)
- Balances the pressure inside and outside of your systems
- Prevents corrosion and water condensation inside the enclosure
- Usable as both cable gland and venting element
- Extends the lifetime of your product
- Highest air flow level
- Anti-vibration protection
- Easy to assemble
- UV resistance
- High strain relief and chemical resistance

Applications

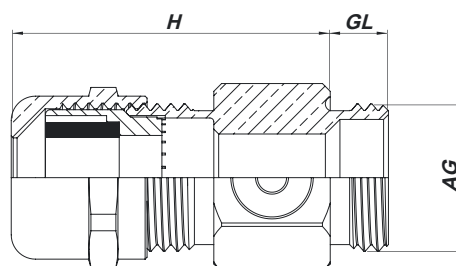
- Industrial and electronic applications
- Wind and solar applications
- Lighting Industry, food and beverage Industry
- Automotive and automation technology
- Railway industry



| Order code | Thread (AG) | Type | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Hole diameter (mm) | Average air flow (l/H) | Water intrusion (bar) | Package (pcs) |
|------------|-------------|-----------------|-----------------|----|----------|---------------------|--------------------|------------------------|-----------------------|---------------|
| | | | H | GL | | | | | | |
| MBM2VG12E0 | M 12 x 1,5 | Brass | 31,5 | 6 | 17 | 4-8 | 12,3 | 70 | 0,1 | 100 |
| MBS2VG12E0 | | Stainless steel | | | | | | | | |
| MBM2VG12E1 | M 12 x 1,5 | Brass | 31,5 | 8 | 17 | 4-8 | 12,3 | 70 | 0,1 | 100 |
| MBS2VG12E1 | | Stainless steel | | | | | | | | |
| MBM2VG16E0 | M 16 x 1,5 | Brass | 33,5 | 6 | 20 | 5-10 | 16,3 | 70 | 0,1 | 50 |
| MBS2VG16E0 | | Stainless steel | | | | | | | | |
| MBM2VG16E1 | M 16 x 1,5 | Brass | 33,5 | 8 | 20 | 5-10 | 16,3 | 70 | 0,1 | 50 |
| MBS2VG16E1 | | Stainless steel | | | | | | | | |
| MBM2VG16E2 | M 16 x 1,5 | Brass | 31,5 | 6 | 17 | 4-8 | 16,3 | 70 | 0,1 | 50 |
| MBS2VG16E2 | | Stainless steel | | | | | | | | |
| MBM2VG16E3 | M 16 x 1,5 | Brass | 31,5 | 8 | 17 | 4-8 | 16,3 | 70 | 0,1 | 50 |
| MBS2VG16E3 | | Stainless steel | | | | | | | | |
| MBM2VG20E0 | M 20 x 1,5 | Brass | 35 | 8 | 22 | 6-12 | 20,3 | 70 | 0,1 | 50 |
| MBS2VG20E0 | | Stainless steel | | | | | | | | |

| Order code | Thread (AG) | Type | Dimensions (mm) | | Hex (mm) | Cable diameter (mm) | Hole diameter (mm) | Average air flow (l/H) | Water intrusion (bar) | Package (pcs) |
|------------|-------------|-----------------|-----------------|-----|----------|---------------------|--------------------|------------------------|-----------------------|---------------|
| | | | H | GL | | | | | | |
| MBM1VG07E0 | PG 7 | Brass | 31,5 | 6 | 17 | 4-8 | 13 | 70 | 0,1 | 100 |
| MBS1VG07E0 | | Stainless steel | | | | | | | | |
| MBM1VG07E1 | PG 7 | Brass | 31,5 | 8 | 17 | 4-8 | 13 | 70 | 0,1 | 100 |
| MBS1VG07E1 | | Stainless steel | | | | | | | | |
| MBM1VG09E0 | PG 9 | Brass | 31,5 | 6 | 17 | 4-8 | 15,5 | 70 | 0,1 | 50 |
| MBS1VG09E0 | | Stainless steel | | | | | | | | |
| MBM1VG09E1 | PG 9 | Brass | 31,5 | 8 | 17 | 4-8 | 15,5 | 70 | 0,1 | 50 |
| MBS1VG09E1 | | Stainless steel | | | | | | | | |
| MBM1VG11E0 | PG 11 | Brass | 33,5 | 6 | 20 | 5-10 | 19 | 70 | 0,1 | 50 |
| MBS1VG11E0 | | Stainless steel | | | | | | | | |
| MBM1VG11E1 | PG 11 | Brass | 33,5 | 8 | 20 | 5-10 | 19 | 70 | 0,1 | 50 |
| MBS1VG11E1 | | Stainless steel | | | | | | | | |
| MBM1VG13E0 | PG 13,5 | Brass | 35 | 6,5 | 22 | 6-12 | 21 | 70 | 0,1 | 50 |
| MBS1VG13E0 | | Stainless steel | | | | | | | | |
| MBM1VG13E1 | PG 13,5 | Brass | 35 | 8 | 22 | 6-12 | 21 | 70 | 0,1 | 50 |
| MBS1VG13E1 | | Stainless steel | | | | | | | | |

Dimensions



Technical specifications

Material

- Cap and body: polyamide PA6 V2
- O-ring: NBR / EPDM
- Vent membrane: acrylic co-polymer on nylon support (hydrophobic-oleophobic)

Properties

- Connection thread: metric (EN 60423)
- Protection class: IP68
- Temperature range: -20 °C +100 °C; -30 +150 °C (short term)
- Balances the pressure inside and outside of your systems
- Prevents corrosion and water condensation inside the enclosure
- Extends the lifetime of your product
- Various air flows
- UV resistance
- Easy to assemble
- Halogen Free
- High chemical resistance

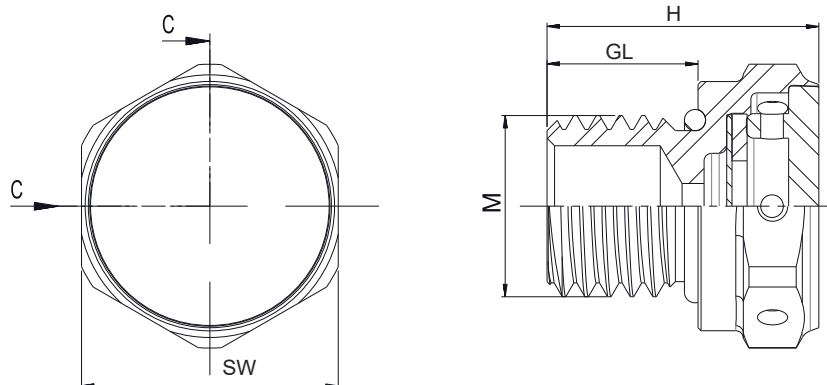
Applications

- Industrial and electronic applications
- Wind and solar applications
- Lighting industry
- Automotive and automation technology
- Railway industry



| Order code | Thread (AG) | Color | Shade | Dimensions (mm) | | Hex (mm) | Thread diameter (mm) | Hole diameter (mm) | Average air flow (l/H) | Water intrusion (bar) | Weight (g) | Package (pcs) |
|------------|-------------|-------|----------|-----------------|----|----------|----------------------|--------------------|------------------------|-----------------------|------------|---------------|
| | | | | H | GL | | | | | | | |
| MBP2VP12L0 | M 12 x 1,5 | Grey | RAL 7035 | 15 | 6 | 18 | 12 | 12,3 | 16 | 0,8 | 2,1 | 500 |
| MBP2VP12B0 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L1 | M 12 x 1,5 | Grey | RAL 7035 | 15 | 6 | 18 | 12 | 12,3 | 25 | 0,5 | 2,1 | 500 |
| MBP2VP12B1 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L2 | M 12 x 1,5 | Grey | RAL 7035 | 15 | 6 | 18 | 12 | 12,3 | 150 | 0,2 | 2,1 | 500 |
| MBP2VP12B2 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L3 | M 12 x 1,5 | Grey | RAL 7035 | 15 | 6 | 18 | 12 | 12,3 | 300 | 0,1 | 2,1 | 500 |
| MBP2VP12B3 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L4 | M 12 x 1,5 | Grey | RAL 7035 | 19 | 10 | 18 | 12 | 12,3 | 16 | 0,8 | 2,4 | 500 |
| MBP2VP12B4 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L5 | M 12 x 1,5 | Grey | RAL 7035 | 19 | 10 | 18 | 12 | 12,3 | 25 | 0,5 | 2,4 | 500 |
| MBP2VP12B5 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L6 | M 12 x 1,5 | Grey | RAL 7035 | 19 | 10 | 18 | 12 | 12,3 | 150 | 0,2 | 2,4 | 500 |
| MBP2VP12B6 | | Black | RAL 9005 | | | | | | | | | |
| MBP2VP12L7 | M 12 x 1,5 | Grey | RAL 7035 | 19 | 10 | 18 | 12 | 12,3 | 300 | 0,1 | 2,4 | 500 |
| MBP2VP12B7 | | Black | RAL 9005 | | | | | | | | | |

Dimensions



Technical specifications

Material

- Cap and body: nickel-plated brass
- O-ring: NBR / EPDM
- Vent membrane: acrylic co-polymer on nylon support (hydrophobic-oleophobic)

Properties

- Connection thread: metric (EN 60423)
- Protection class: IP68
- Temperature range: -20 °C +100 °C; -30 +150 °C (short term)
- Balances the pressure inside and outside of your systems
- Prevents corrosion and water condensation inside the enclosure
- Extends the lifetime of your product
- Various air flows
- UV resistance
- Easy to assemble
- Halogen Free
- High chemical resistance

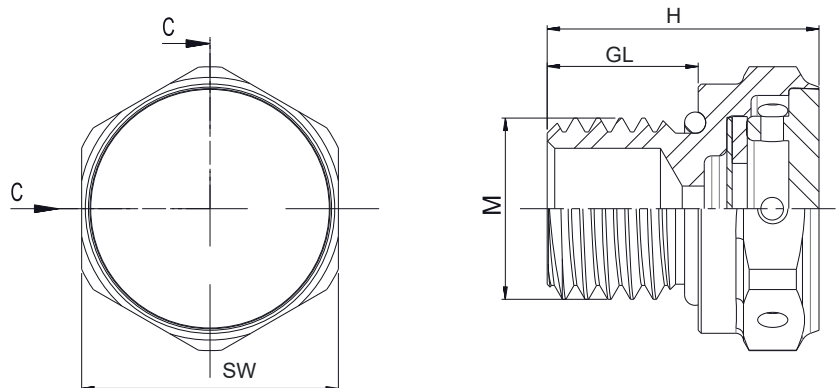
Applications

- Industrial and electronic applications
- Wind and solar applications
- Lighting industry
- Automotive and automation technology
- Railway industry



| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Thread diameter (mm) | Hole diameter (mm) | Average air flow (l/H) | Water intrusion (bar) | Package (pcs) |
|------------|-------------|-----------------|----|----------|----------------------|--------------------|------------------------|-----------------------|---------------|
| | | H | GL | | | | | | |
| MBM2VP04E3 | M 4 x 0,70 | 10 | 3 | 12 | 4 | 4,2 | 105 | 0,1 | 100 |
| MBM2VP08E3 | M 8 x 1,25 | 13 | 6 | 12 | 8 | 8,2 | 105 | 0,1 | 100 |
| MBM2VP10E3 | M 10 x 1,5 | 13 | 6 | 12 | 10 | 10,2 | 105 | 0,1 | 100 |
| MBM2VP12E0 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 16 | 0,8 | 100 |
| MBM2VP12E1 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 25 | 0,5 | 100 |
| MBM2VP12E2 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 150 | 0,2 | 100 |
| MBM2VP12E3 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 300 | 0,1 | 100 |
| MBM2VP12E4 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 16 | 0,8 | 100 |
| MBM2VP12E5 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 25 | 0,5 | 100 |
| MBM2VP12E6 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 150 | 0,2 | 100 |
| MBM2VP12E7 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 300 | 0,1 | 100 |

Dimensions



Technical specifications

Material

- Cap and body: stainless steels (AISI303/316L)
- O-ring: NBR / EPDM
- Vent membrane: acrylic co-polymer on nylon support (hydrophobic-oleophobic)

Properties

- Connection thread: metric (EN 60423)
- Protection class: IP68
- Temperature range: -20 °C +100 °C; -30 +150 °C (short term)
- Balances the pressure inside and outside of your systems
- Prevents corrosion and water condensation inside the enclosure
- Extends the lifetime of your product
- Various air flows
- UV resistance
- Easy to assemble
- Halogen Free
- High chemical resistance

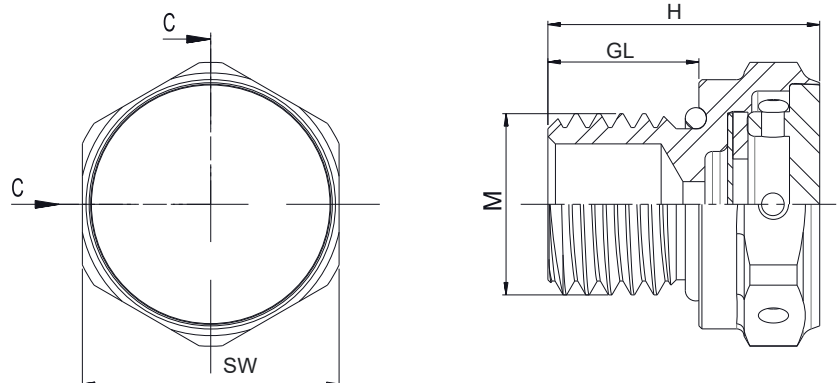
Applications

- Industrial and electronic applications
- Wind and solar applications
- Lighting industry
- Automotive and automation technology
- Railway industry



| Order code | Thread (AG) | Dimensions (mm) | | Hex (mm) | Thread diameter (mm) | Hole diameter (mm) | Average air flow (l/H) | Water intrusion (bar) | Package (pcs) |
|------------|-------------|-----------------|----|----------|----------------------|--------------------|------------------------|-----------------------|---------------|
| | | H | GL | | | | | | |
| MBS2VP04E3 | M 4 x 0,70 | 10 | 3 | 12 | 4 | 4,2 | 105 | 0,1 | 100 |
| MBS2VP08E3 | M 8 x 1,25 | 13 | 6 | 12 | 8 | 8,2 | 105 | 0,1 | 100 |
| MBS2VP10E3 | M 10 x 1,5 | 13 | 6 | 12 | 10 | 10,2 | 105 | 0,1 | 100 |
| MBS2VP12E0 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 16 | 0,8 | 100 |
| MBS2VP12E1 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 25 | 0,5 | 100 |
| MBS2VP12E2 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 150 | 0,2 | 100 |
| MBS2VP12E3 | M 12 x 1,5 | 14 | 6 | 17 | 12 | 12,3 | 300 | 0,1 | 100 |
| MBS2VP12E4 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 16 | 0,8 | 100 |
| MBS2VP12E5 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 25 | 0,5 | 100 |
| MBS2VP12E6 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 150 | 0,2 | 100 |
| MBS2VP12E7 | M 12 x 1,5 | 18 | 10 | 17 | 12 | 12,3 | 300 | 0,1 | 100 |

Dimensions



Single grommets are cable grommets with various design for leading through both low and medium power current cables as well as various types of tubing. These are suitable for in- and outdoor applications and available for both PG-and mm-openings.

Single grommets are available in many different polymers with different characteristics, such as weather, UV-and ozone resistance, oil resistance and RoHS compliance.

Models T-VET and T-GET are new design which can be used as sealing plug. Both these designs give absolute protection against dust and strong jets of water and also against effects of immersion between 15 cm and 1 m (IP67).

Single grommets T-VET and T-GET are available as standard of TPE-material. As a request also other colors and materials like conductive EMC-material are available.

Single grommets T-VET and T-GET are inspected and certified by SGS Fimko, the Finnish authority in charge of electrical equipment safety standards.



Installation



Make a hole of appropriate size to blind plate or knock-out plate. Avoid rough and sharp edges.



Place the grommet on the hole and pull it firmly to its place.



Make a small hole into the membrane using a screwdriver or cut the top of the cone using side cutters.



Push the cable or tube through the guide hole.



(Back side) Pull the cable or tube back for some 20 mm to lock it.

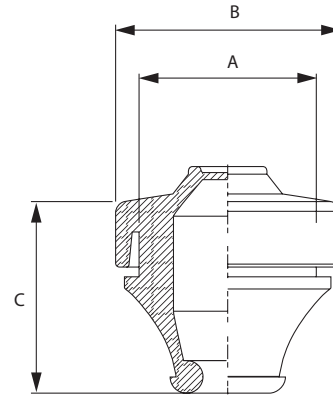


(Front side) Pull the cable or tube back for some 20 mm to lock it.

Single grommets T-VET are designed for leading through both low and medium power current cables and also various types of tubing. Suitable for in- and outdoor applications. They fit to openings made with Dimensions of PG. Model T-VET has a new double seal design where top side of the grommet is closed and therefore it is possible to use it as plug.

Technical specifications

- IP67 total protection against ingress of dust and protection against the effects of immersion between 15,0 cm and 1,0 m
- Made of TPE material
- Flame resistant UL 94 V-0 (look at product table)
- Plate wall thickness between 1 - 4 mm.
- Available for cables with 3 to 35 mm diameter
- Operating temperature from -40 °C to +100 °C



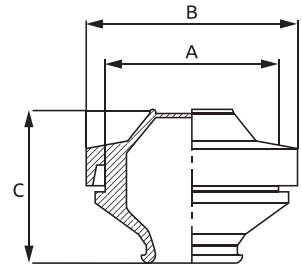
| Order code | Type | Cable diameter (mm) | Color | Shade | Classification | Dimensions (mm) | | | Weight (g) | Package (pcs) |
|------------|------|---------------------|---------|----------|----------------|-----------------|------|----|--------------------------|---------------|
| | | | | | | A | B | C | | |
| MBB0105G11 | PG7 | 3 - 5 | Grey ● | RAL 7042 | UL 94 V-0 | 13 | 20 | 17 | 2,7 | 50 |
| MBB0105X11 | PG7 | | Grey ● | RAL 7035 | | | | | 3,4 | |
| MBB0105B11 | PG7 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0107G11 | PG9 | 5 - 7 | Grey ● | RAL 7042 | UL 94 V-0 | 16 | 20 | 19 | 3,1 | 50 |
| MBB0107X11 | PG9 | | Grey ● | RAL 7035 | | | | | 3,5 | |
| MBB0107B11 | PG9 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0110G11 | PG11 | 7 - 10 | Grey ● | RAL 7042 | UL 94 V-0 | 19 | 24 | 21 | 4,3 | 50 |
| MBB0110X11 | PG11 | | Grey ● | RAL 7035 | | | | | 5 | |
| MBB0110B11 | PG11 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0114G11 | PG16 | 10 - 14 | Grey ● | RAL 7042 | UL 94 V-0 | 23 | 29 | 23 | 6,7 | 50 |
| MBB0114X11 | PG16 | | Grey ● | RAL 7035 | | | | | 7,8 | |
| MBB0114B11 | PG16 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0120G11 | PG21 | 14 - 20 | Grey ● | RAL 7042 | UL 94 V-0 | 29 | 34 | 26 | 8 | 25 |
| MBB0120X11 | PG21 | | Grey ● | RAL 7035 | | | | | 9,2 | |
| MBB0120B11 | PG21 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0126G11 | PG29 | 20 - 26 | Grey ● | RAL 7042 | UL 94 V-0 | 38 | 46 | 30 | 15 | 25 |
| MBB0126X11 | PG29 | | Grey ● | RAL 7035 | | | | | 17,4 | |
| MBB0126B11 | PG29 | | Black ● | | | | | | UL 94 V-0, oil resistant | |
| MBB0135G11 | PG36 | 26 - 35 | Grey ● | RAL 7042 | UL 94 V-0 | 48 | 57,5 | 33 | 25 | 10 |
| MBB0135X11 | PG36 | | Grey ● | RAL 7035 | | | | | 28 | |
| MBB0135B11 | PG36 | | Black ● | | | | | | UL 94 V-0, oil resistant | |

Look more about materials at Comparison of materials on page 162.

Single grommets T-GET are for leading through both low and medium power current cables as well various types of tubing. The grommets are suitable for in- and outdoor applications. These grommets fit to openings made with Dimensions of mm. T-GET model has new double seal design where top side of the grommet is closed and therefore it is possible to use it as plug.

Technical specifications

- IP67 total protection against ingress of dust and protection against the effects of immersion between 15,0 cm and 1,0 m
- Made of TPE material
- Flame resistant UL 94 V-0 (look at product table)
- Plate wall thickness between 1 - 5 mm and 1,2 - 5,2 mm.
- Available for cables with 3 to 60 mm diameter
- Operating temperature from -40 °C to +100 °C



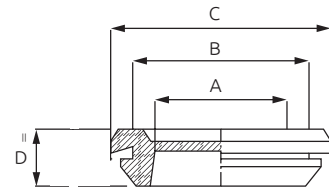
| Order code | Type | Cable diameter (mm) | Color | Shade | Classification | Dimensions (mm) | | | Plate thickness (mm) | Weight (g) | Package (pcs) |
|------------|------|---------------------|---------|----------|--------------------------|-----------------|----|------|----------------------|------------|---------------|
| | | | | | | A | B | C | | | |
| MBB0305G11 | M12 | 3 - 5 | Grey ● | RAL 7042 | UL 94 V-0 | 12 | 19 | 20,9 | 1 - 5 | 2,8 | 50 |
| MBB0305X11 | M12 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0305B11 | M12 | | Black ● | | | | | | | | |
| MBB0307G11 | M16 | 5 - 7 | Grey ● | RAL 7042 | UL 94 V-0 | 16 | 23 | 21,6 | 1 - 5 | 3,2 | 50 |
| MBB0307X11 | M16 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0307B11 | M16 | | Black ● | | | | | | | | |
| MBB0310G11 | M20 | 7 - 10 | Grey ● | RAL 7042 | UL 94 V-0 | 20 | 27 | 24,3 | 1 - 5 | 4,3 | 50 |
| MBB0310X11 | M20 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0310B11 | M20 | | Black ● | | | | | | | | |
| MBB0314G11 | M25 | 10 - 14 | Grey ● | RAL 7042 | UL 94 V-0 | 25 | 32 | 24,8 | 1 - 5 | 8 | 50 |
| MBB0314X11 | M25 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0314B11 | M25 | | Black ● | | | | | | | | |
| MBB0320G11 | M32 | 14 - 20 | Grey ● | RAL 7042 | UL 94 V-0 | 32 | 39 | 28,1 | 1 - 5 | 12 | 25 |
| MBB0320X11 | M32 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0320B11 | M32 | | Black ● | | | | | | | | |
| MBB0326G11 | M40 | 20 - 26 | Grey ● | RAL 7042 | UL 94 V-0 | 40 | 46 | 31,8 | 1 - 5 | 16,4 | 25 |
| MBB0326X11 | M40 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0326B11 | M40 | | Black ● | | | | | | | | |
| MBB0335G11 | M50 | 26 - 35 | Grey ● | RAL 7042 | UL 94 V-0 | 50 | 57 | 39,7 | 1 - 5 | 24 | 10 |
| MBB0335X11 | M50 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0335B11 | M50 | | Black ● | | | | | | | | |
| MBB0345G11 | M60 | 30 - 45 | Grey ● | RAL 7042 | UL 94 V-0 | 60 | 69 | 59,6 | 1 - 5 | 54 | 5 |
| MBB0345X11 | M60 | | Grey ● | RAL 7035 | | | | | | | |
| MBB0345B11 | M60 | | Black ● | | | | | | | | |
| MBB0360B11 | M80 | 40 - 60 | Black ● | | UL 94 V-0, oil resistant | 80 | 89 | 78,2 | 1,2 - 5,2 | 110 | 5 |

Look more about materials at Comparison of materials on page 162.

Single grommets T-GD, T-GDM are for leading through both low and medium power current cables and also various types of tubing. The grommets are suitable for in- and outdoor applications. The T-GD grommets fit to openings made with Dimensions of PG and the T-GDM grommets fit to openings made with metric Dimensions (mm).

Technical specifications

- IP54 protection against dust and water splashed from all directions.
- Made of TPE material
- Flame resistant UL 94 V-0
- Plate wall thickness between 1 - 2 mm and 1,5 - 3 mm.
- Available for cables with 9 to 69 mm diameter
- Operating temperature from -40 °C to +100 °C



T-GD

| Order code | Type | Cable diameter (mm) | Color | Dimensions (mm) | | | | Plate thickness (mm) | Weight (g) | Package (pcs) |
|------------|--------|---------------------|---------|-----------------|------|----|----|----------------------|------------|---------------|
| | | | | A | B | C | D | | | |
| MBB0509B11 | PG9 | 9 | Black ● | 9 | 15,5 | 20 | 7 | 1 - 2 | 2 | 100 |
| MBB0511B11 | PG11 | 11 | Black ● | 11 | 18,5 | 23 | 7 | 1 - 2 | 3 | 100 |
| MBB0513B11 | PG13,5 | 13,5 | Black ● | 13,5 | 20,5 | 25 | 7 | 1 - 2 | 4 | 100 |
| MBB0516B11 | PG16 | 16 | Black ● | 16 | 22,5 | 28 | 7 | 1 - 2 | 4 | 100 |
| MBB0521B11 | PG21 | 21 | Black ● | 21 | 28 | 35 | 9 | 1 - 2 | 12 | 100 |
| MBB0529B11 | PG29 | 29 | Black ● | 29 | 37 | 44 | 10 | 1 - 2 | 16 | 100 |
| MBB0536B11 | PG36 | 36 | Black ● | 36 | 47 | 54 | 12 | 1,5 - 3 | 17 | 100 |
| MBB0548B11 | PG48 | 48 | Black ● | 48 | 60 | 68 | 12 | 1,5 - 3 | 54 | 50 |
| MBB0553B11 | PG53 | 53 | Black ● | 53 | 64 | 75 | 12 | 1,5 - 3 | 110 | 50 |
| MBB0569B11 | PG69 | 69 | Black ● | 69 | 79 | 90 | 12 | 1,5 - 3 | 110 | 30 |

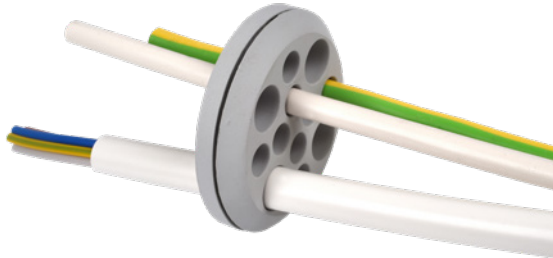
Look more about materials at Comparison of materials on page 162.

T-GDM

| Order code | Type | Cable diameter (mm) | Color | Dimensions (mm) | | | | Plate thickness (mm) | Weight (g) | Package (pcs) |
|------------|------|---------------------|---------|-----------------|------|----|----|----------------------|------------|---------------|
| | | | | A | B | C | D | | | |
| MBB0609B11 | M12 | 9 | Black ● | 9 | 12,2 | 17 | 7 | 1 - 2 | 2 | 100 |
| MBB0611B11 | M16 | 11 | Black ● | 11 | 16,2 | 21 | 7 | 1 - 2 | 3 | 100 |
| MBB0613B11 | M20 | 13,5 | Black ● | 13,5 | 20,5 | 25 | 7 | 1 - 2 | 4 | 100 |
| MBB0616B11 | M25 | 16 | Black ● | 16 | 25,2 | 31 | 7 | 1 - 2 | 4 | 100 |
| MBB0621B11 | M32 | 21 | Black ● | 21 | 32,2 | 40 | 9 | 1 - 2 | 12 | 100 |
| MBB0629B11 | M40 | 29 | Black ● | 29 | 40,2 | 48 | 10 | 1 - 2 | 16 | 100 |
| MBB0636B11 | M50 | 36 | Black ● | 36 | 50,2 | 58 | 12 | 1,5 - 3 | 17 | 100 |
| MBB0648B11 | M60 | 48 | Black ● | 48 | 60,2 | 68 | 12 | 1,5 - 3 | 54 | 50 |
| MBB0653B11 | M70 | 53 | Black ● | 53 | 70,2 | 81 | 12 | 1,5 - 3 | 110 | 50 |
| MBB0669B11 | M80 | 69 | Black ● | 69 | 80,2 | 91 | 12 | 1,5 - 3 | 110 | 30 |

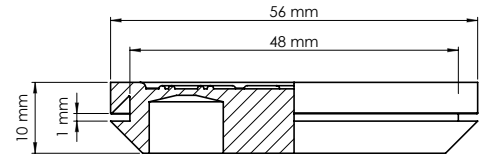
Look more about materials at Comparison of materials on page 162.

Single grommets MGD are for leading through both low and medium power current cables as well various types of tubing. The grommets are made of TPE-S material and are suitable for in- and outdoor applications. The grommets fit to standard M50 opening.



Technical specifications

- IP54 protection against dust and water splashed from all directions.
- Made of EPDM material
- Plate wall thickness between 1 - 2 mm and 1,5 - 3 mm.
- Available for cables with 3 to 16 mm diameter
- Service temperature for unstressed material -40 °C to +100 °C



| Order code | Color | Cable diameter | Weight (g) | Package (pcs) |
|------------|-----------------------|-----------------------|------------|---------------|
| MBB0712L11 | Light Grey (RAL 7035) | 8 x 9 mm & 4 x 13 mm | 20 | 50 |
| MBB0707L11 | Light Grey (RAL 7035) | 4 x 10 mm & 3 x 16 mm | 20 | 50 |

Look more about materials at [Comparison of materials on page 162](#).

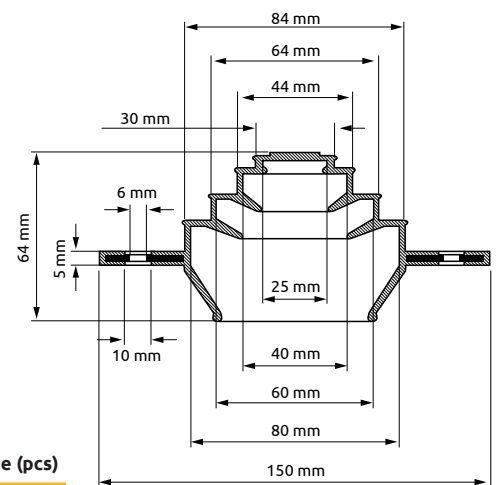
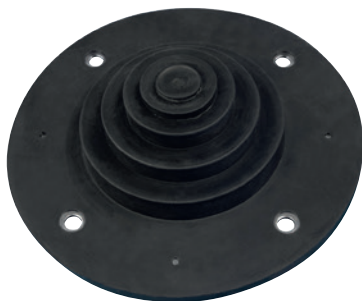
Single grommets M 20-80

Single grommets M 20-80 are for leading through both low and medium power current cables as well various types of tubing.

Single grommets M 20-80 are an excellent solution for the cables with the higher diameter - up to 80 mm diameter. The grommets are suitable for in- and outdoor applications.

Technical specifications

- Made of TPE material
- Flame resistant UL 94 V-0
- Plate wall thickness 1,5 - 3 mm.
- Available for cables with 20 to 80 mm diameter
- Service temperature for unstressed material -40 °C to +100 °C



| Order code | Color | Classification | Weight (g) | Package (pcs) |
|------------|-----------------------|--------------------------|------------|---------------|
| MBA6N80G11 | Grey (RAL 7042) | | 260 | 50 |
| MBA6N80X11 | Light Grey (RAL 7035) | UL 94 V-0 | 260 | 50 |
| MBA6N80B11 | Black | UL 94 V-0, Oil resistant | 260 | 50 |

Look more about materials at [Comparison of materials on page 162](#).

Cable entry plates

Fast and easy
assembly

Dual sealing
according to IP65/66

UL94 V0 self-extinguishing
options available



- MC (IP66/67) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MC (IP66/67) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- Suitable for standard cut-outs for FL21. For screwing in place

Advantages

- Fast and easy assembly
- High cable density
- Dual cable sealing with IP66/IP67
- Excellent IP protection when cables are bent
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP66 and IP67
- Material: Thermoplastic elastomer
- Material base frame: Metal reinforcement electroplated steel
- Color: Black or Grey (RAL7035)
- Flame class: UL94-V0, self-extinguishing option available
- Temperature: -40 °C...+100 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm



| Description | Package (pcs) | MC 3/7 (IP66/67) | MC 25/27 (IP66/67) | MC 35/37 (IP66/67) |
|--|---------------|------------------|--------------------|--------------------|
| Light Grey RAL 7035 4 plastic pins included | 40 | MBA1C07G11 | MBA1C27G11 | MBA1C37G11 |
| Light Grey RAL 7035 UL 94 V-0 approved | 60 | MBA1N07X11 | MBA1N27X11 | MBA1N37X11 |
| Black UL 94 V-0 approved | 60 | MBA1N07B11 | MBA1N27B11 | MBA1N37B11 |

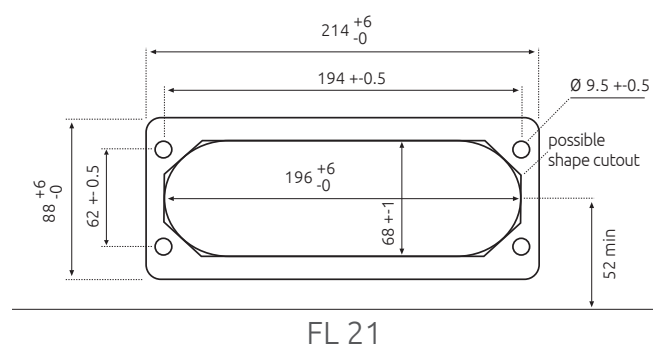
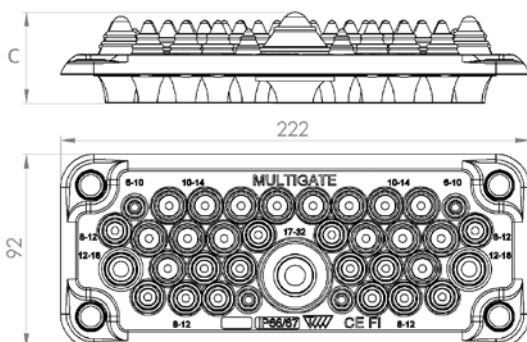
Technical data

| | | | |
|--|--|---|---|
| Service temperature | -40 to + 100 °C | -40 to + 100 °C | -40 to + 100 °C |
| Dimensions height C (mm) | 76 | 43 | 43 |
| Number of cables (pcs) x cable diameter (mm) | 4 x 8 - 16 2 x 24 - 54 1 x 30 - 60 - - | 4 x 5 - 7 4 x 8 - 12 13 x 10 - 14 4 x 14 - 20 2 x 20 - 26 | 4 x 6 - 10 14 x 8 - 12 16 x 10 - 14 2 x 12 - 18 1 x 17 - 32 |
| Total number of cables | 7 | 27 | 37 |
| Mounting hole size | C - FL 21 | C - FL 21 | C - FL 21 |
| Weight (g) | 206 | 229 | 233 |

Mounting pins are available on request.

Look more about materials at Comparison of materials on page 162.

Dimensions of cable entry plates and mounting hole



- MC (IP65) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MC (IP65) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- Suitable for standard cut-outs for FL21. For crewing in place

Advantages

- Fast and easy assembly
- High cable density
- Dual cable sealing with IP65
- Hygienic design - free of dirt-collecting recesses
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP65
- Material: Thermoplastic elastomer
- Material base frame: Metal reinforcement electroplated steel
- Color: Black or Grey (RAL7035)
- Flame class: UL94-V0, self-extinguishing option available
- Oil-resistant option available
- Temperature: -40 °C...+100 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm



MC 3 (IP65)



MC 25 (IP65)



MC 35 (IP65)

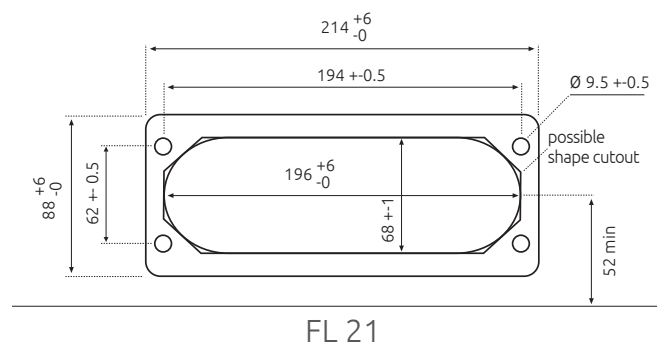
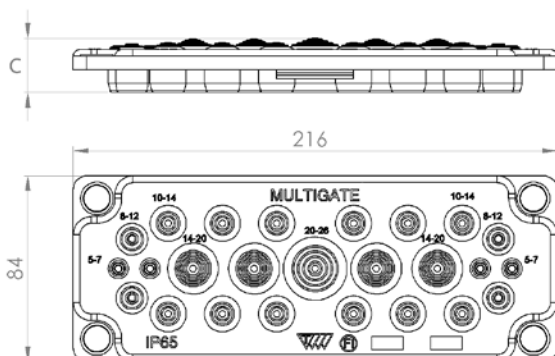
| | | | | |
|--|---|------------|------------|------------|
| Light Grey RAL 7035 4 plastic pins included | ● | MBA1C03L11 | MBA1C25L11 | MBA1C35L11 |
| Black | ● | MBA1N03A11 | MBA1N25A11 | MBA1N35A11 |
| Black, UL94 V0, oil-resistant | ● | MBA1N03B11 | MBA1N25B11 | MBA1N35B11 |

| Technical data | | | |
|--|---|---|---|
| Service temperature | -40 to + 100° C | -40 to + 100° C | -40 to + 100° C |
| Dimensions (mm) | 214 x 82 | 216 x 84 | 216 x 84 |
| Number of cables (pcs) x cable diameter (mm) | 4 x 8 - 12 (IP54) 2 x 24 - 54 (IP65) 1 x 30 - 60 (IP65) - - | 4 x 5 - 7 4 x 8 - 12 12 x 10 - 14 4 x 14 - 20 1 x 20 - 26 | 2 x 6 - 10 14 x 7 - 12 16 x 10 - 14 2 x 12 - 18 1 x 17 - 32 |
| Total number of cables | 7 | 25 | 35 |
| Mounting hole size | C - FL 21 | C - FL 21 | C - FL 21 |
| Weight (g) | 199 | 230 | 220 |
| Package (pcs) | 100 | 100 | 100 |

Mounting pins are available on request.

Look more about materials at Comparison of materials on page 162.

Dimensions of cable entry plates and mounting hole



MC 4 (IP65)

- MC 4 (IP65) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MC 4 (IP65) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through

Advantages

- Fast and easy assembly
- High cable density
- Dual cable sealing with IP65
- Hygienic design - free of dirt-collecting recesses
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP65
- Material: Thermoplastic elastomer
- Material base frame: Metal reinforcement stainless steel
- Color: Black

Stainless steel reinforcement frame eliminates the inductive eddy currents that can be generated by the cables



- Flame class: UL94-V0, self-extinguishing option available
- Oil-resistant option available
- Temperature: -40 °C...+100 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm

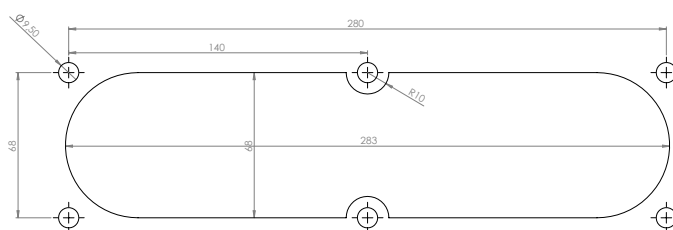
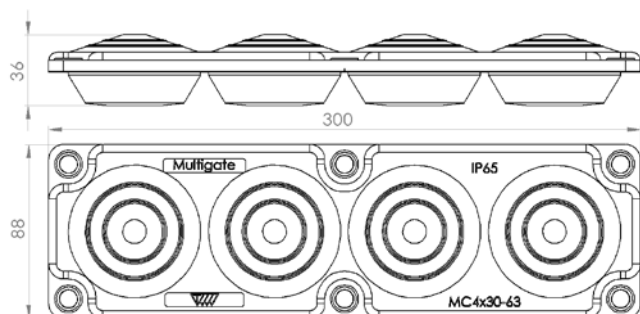


MC 4 (IP65)

| | | |
|--|-----------------|------------|
| Black, UL 94 V-0 approved | ● | MBA1F04B11 |
| Technical data | | |
| Service temperature | -40 to + 100° C | |
| Number of cables (pcs) x cable diameter (mm) | 4 x 30 - 63 mm | |
| Total number of cables | 4 | |
| Mounting hole size | 283 x 68 mm | |
| Weight (g) | 258 | |
| Package (pcs) | 50 | |

Look more about materials at [Comparison of materials](#) on page 162.

Dimensions of cable entry plates and mounting hole



- MC 10 (IP55) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MC 10 (IP55) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- Suitable for standard cut-outs for FL21. For screwing in place

Advantages

- Fast and easy assembly
- High cable density
- Excellent IP protection when cables are bent
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP55
- Material: Thermoplastic elastomer (TPE)
- Material base frame: glass fibre reinforced polypropylene (PP-GF)
- Color: Grey (RAL7035)
- Temperature: -40 °C...+100 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm

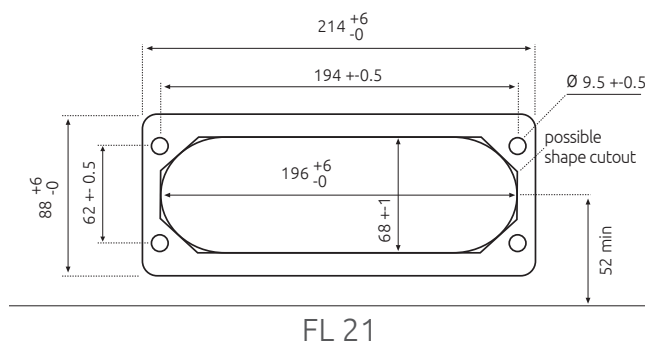
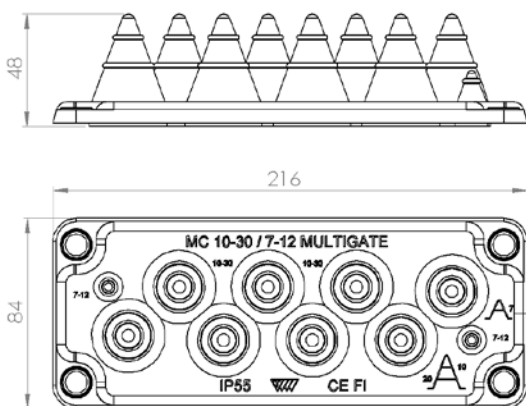


MC 10 (IP55)

| | | |
|--|---------------------------|------------|
| Light Grey, RAL 7035 UL 94 V-0 approved | ● | MBA1N10X11 |
| Technical data | | |
| Service temperature | -40 to + 100 °C | |
| Number of cables (pcs) x cable diameter (mm) | 2 x 7 - 12 8 x 10 - 30 | |
| Total number of cables | 10 | |
| Mounting hole size | C - FL 21 | |
| Weight (g) | 200 | |
| Package (pcs) | 100 | |

*Mounting pins are available on request.
Look more about materials at Comparison of materials on page 162.*

Dimensions of cable entry plates and mounting hole



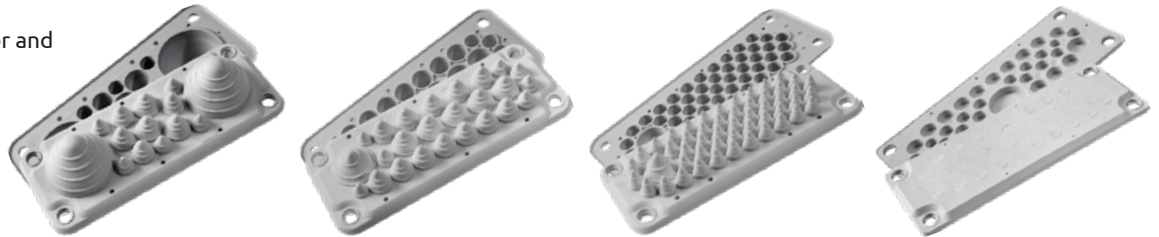
- LMC (IP44, 54) cable entry plates are designed for route and seal cables without connectors
- The assembly of the LMC (IP44, 54) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- Suitable for standard cut-outs for FL21. For screwing in place

Advantages

- Fast and easy assembly
- High cable density
- Excellent IP protection when cables are bent
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP44, IP54
- Material: Thermoplastic elastomer
- Material base frame: Metal reinforcement electroplated steel
- Color: Grey (RAL7035)
- Flame class: UL94-V0, self-extinguishing option available
- Temperature: -40 °C...+90 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm



LMC 14 (IP54)

LMC 25 (IP54)

LMC 51 (IP54)

LMC 35 (IP44)

| | | | | |
|--|------------|------------|------------|------------|
| Light Grey RAL 7035 4 plastic pins included | MBA3F14L11 | MBA3F25L11 | MBA3F51L11 | MBA3F35L11 |
| Light Grey RAL 7035 UL 94 V-0 approved | MBA3N14X11 | MBA3N25X11 | MBA3N51X11 | - |

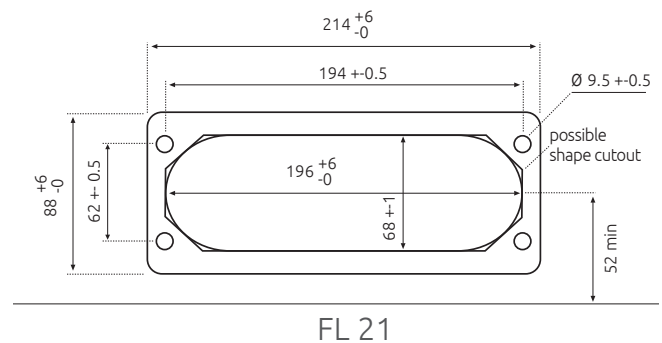
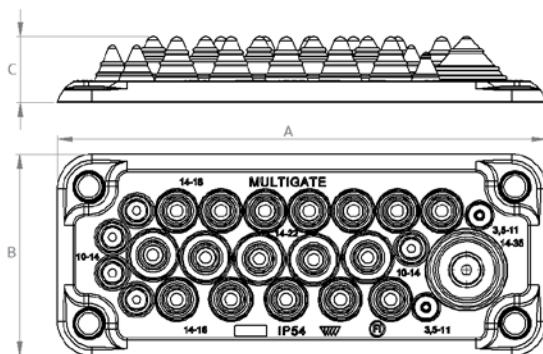
Technical data

| Service temperature | -40 to + 100 °C | -40 to + 100 °C | -40 to + 100 °C | -40 to + 100 °C |
|--|---|---|---|---|
| Number of cables (pcs) x cable diameter (mm) | 5 x 10 - 14 4 x 14 - 18 3 x 14 - 22 2 x 24 - 54 - | 2 x 3.5 - 11 5 x 10 - 14 12 x 14 - 18 5 x 14 - 22 1 x 14 - 35 | 50 x 7 - 13 1 x 15 - 25 - - - | 1 x 15 - 32 2 x 12 - 18 16 x 10 - 14 14 x 7 - 12 2 x 6 - 10 |
| Total number of cables | 14 | 25 | 51 | 35 |
| Mounting hole size | C - FL 21 | C - FL 21 | C - FL 21 | C - FL 21 |
| Weight (g) | 199 | 201 | 205 | 220 |
| Package (pcs) | 100 | 100 | 100 | 100 |

Mounting pins are available on request.

Look more about materials at Comparison of materials on page 162.

Dimensions of cable entry plates and mounting hole



| Type | Length (A) | Width (B) | Height (C) |
|-----------------------|------------|-----------|------------|
| LMC (IP44, 54) | | | |
| LMC 14 (IP54) | 222 | 92 | 30 |
| LMC 25 (IP54) | 222 | 92 | 30 |
| LMC 51 (IP54) | 222 | 92 | 30 |
| LMC 35 (IP44) | 214 | 84 | 9,5 |

- MC 16 (IP54) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MC 16 (IP54) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- MC 16 can be used by two different ways. When the cable entry plate is used "facade" up, it works as a regular IP54 enclosure cable gland plate. When the cable entry plate is used reversed it functions as a piping grommet in dry space switchboards. Pipes lock securely to the seal in the gland plate by the friction of the elastic material
- Suitable for standard cut-outs for FL21. For screwing in place

Advantages

- Fast and easy assembly
- High cable density
- Excellent IP protection when cables are bent
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP55
- Material: Thermoplastic elastomer (TPE)
- Material base frame: glass fibre reinforced polypropylene (PP-GF)
- Color: Grey (RAL7035)
- Temperature: -40°C...+100°C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 9,5 mm

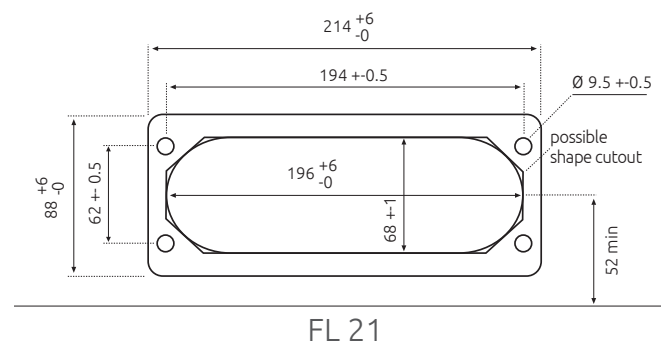
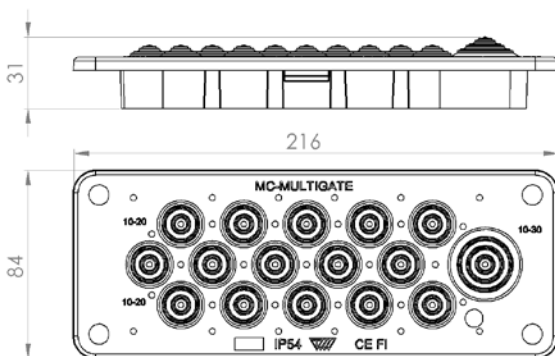


MC 16 (IP54)

| | | |
|---|-----------------------------|------------|
| Light Grey, RAL 7035 4 plastic pins included | ● | MBA1C16L11 |
| Technical data | | |
| Service temperature | -40 to + 100 °C | |
| Number of cables (pcs) x cable diameter (mm) | 15 x 10 - 20 1 x 10 - 30 | |
| Total number of cables | 16 | |
| Mounting hole size | C - FL 21 | |
| Weight (g) | 120 | |
| Package (pcs) | 80 | |

Mounting pins are available on request.
Look more about materials at Comparison of materials on page 162.

Dimensions of cable entry plates and mounting hole



- MB (IP55, 66/67) cable entry plates are designed for route and seal cables without connectors
- The assembly of the MB (IP55, 66/67) with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through
- Suitable for standard cut-outs for FL13. For screwing in place

Advantages

- Fast and easy assembly
- High cable density
- Dual cable sealing with IP66/IP67
- Excellent IP protection when cables are bent
- Screw mounting
- Suitable for both indoor and outdoor use

Technical specifications

- IP rating: IP55, IP66 and IP67
- Material: Thermoplastic elastomer
- Material base frame: Metal reinforcement electroplated steel
- Color: White or Grey (RAL7035)
- Flame class: UL94-V0, self-extinguishing option available
- Temperature: -40°C...+100 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 7 mm



MB 4/10 (IP55)*



MB 5/11 (IP66/67)*

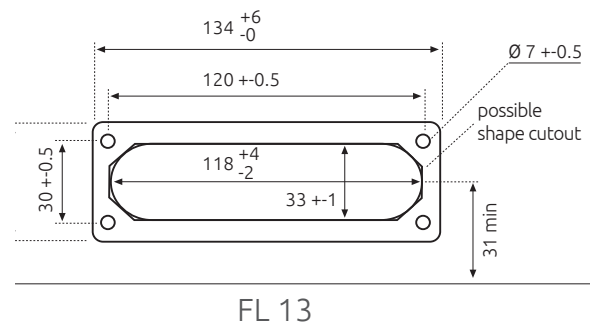
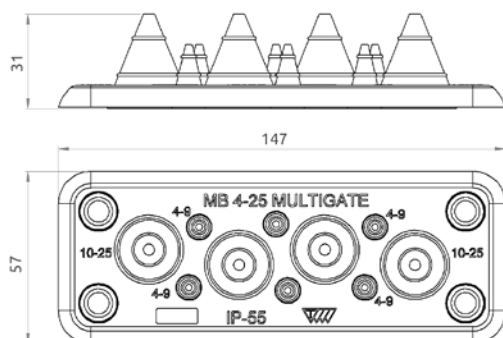
| | | | |
|---|---|------------|------------|
| Light Grey RAL 7035 | ● | - | MBA2N11L11 |
| Light Grey RAL 7035 UL 94 V-0 approved | ● | MBA2N10W11 | MBA2N11X11 |
| White UL 94 V-0 approved | ○ | MBA2N12W11 | - |

Technical data

| | | |
|--|------------------------------------|---|
| Service temperature | -40 to + 100 °C | -40 to + 100 °C |
| Number of cables (pcs) x cable diameter (mm) | 4 x 10 - 25 6 x 4 - 9 - - | 4 x 5 - 7 3 x 7 - 10 2 x 10 - 14 2 x 15 - 30 |
| Total number of cables | 10 | 11 |
| Mounting hole size | B - FL 13 | B - FL 13 |
| Weight (g) | 68 | 86 |
| Package (pcs) | 200 | 200 |

* For the smaller mounting hole (size B).
Look more about materials at Comparison of materials on page 162.

Dimensions of cable entry plates and mounting hole



| Type | Length (A) | Width (B) | Height (C) |
|-------------------------|------------|-----------|------------|
| MB (IP55, 66/67) | | | |
| MB 4/10 (IP55) | 146 | 56 | 31 |
| MB 5/11 (IP66/67) | 147 | 57 | 42 |

MHF series plastic reinforced cable entry plates are suitable for leading through cables and various types of tubing. They match the cut-out dimensions of standard 10/16/24-pole industrial connectors, no separate gaskets are needed.

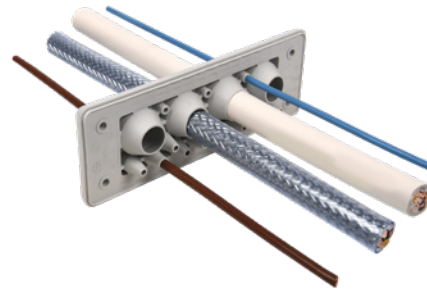
These cable entry plates give total protection against ingress of dust and water splashed from all directions, due to IP protection class of IP66 and are suitable for both indoor and outdoor use. The materials are self-extinguishing (UL94 V0) and halogen free, the outer sides of the cable entry plates are flat, and thus suitable for medical and food industries, due to ease of cleaning.

Technical specifications


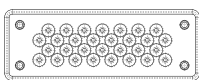

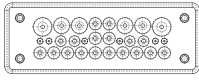



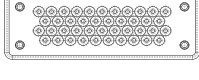


- IP rating: IP66
- Membrane material: Thermoplastic elastomer
- Frame material: Glass fiber reinforced polypropylene
- Color: Grey (RAL7035) or black (RAL9005)
- Flame-retardancy class: UL94 V0
- Temperature: -40 °C...+90 °C
- Properties: Halogen free, Silicone free
- Mounting type: Screw type mounting
- Diam. of screw holes: 4,2 mm

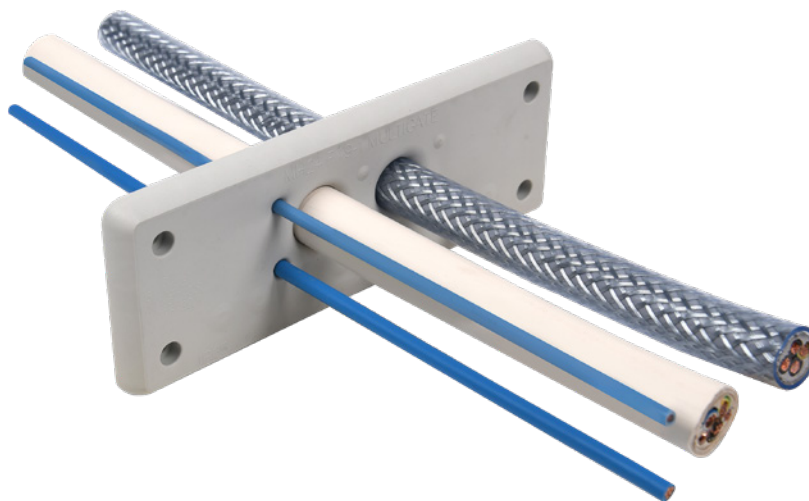
Advantages

- High cable density
- Self-extinguishing plastic
- Dual cable sealing with IP66
- Hygienic design - free of dirt-collecting recesses
- Screw mounting
- Suitable for both indoor and outdoor use



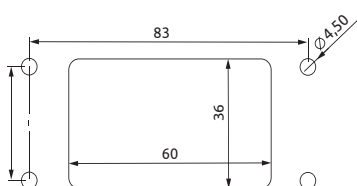
| | Drawing | Name | Product code | No. of cables x diameter | Weight (g) | Opening size |
|------------|---------|------------|------------------------------|--|------------|--------------|
| | | MH10 F12-1 | ● MBA8N12X10 ● MBA8N12B10 | 5 x 3 - 7 4 x 5 - 10 2 x 7 - 13 1 x 9 - 16 | 48 | B10 |
| | | MH16 F17-1 | ● MBA8N17X16 ● MBA8N17B16 | 12 x 3 - 7 5 x 7 - 13 | 59 | B16 |
| | | MH24 F17-2 | ● MBA8N17X24 ● MBA8N17B24 | 6 x 3 - 7 6 x 5 - 10 5 x 9 - 16 | 64 | B24 |
| | | MH24 F17-3 | ● MBA8N17X10 ● MBA8N17B10 | 4 x 3 - 7 12 x 7 - 20 1 x 10 - 20 | 59 | B24 |
| NEW | | MH24 F19-1 | ● MBA8N19X24 ● MBA8N19B24 | 5 x 1,5 - 3 10 x 3,2 - 6,5 4 x 16 - 22 | 71 | B24 |
| NEW | | MH24 F20-1 | ● MBA8N20X24 ● MBA8N20B24 | 6 x 1,5 - 3 14 x 7,2 - 12 | 71 | B24 |
| | | MH24 F22-1 | ● MBA8N22X24 ● MBA8N22B24 | 15 x 3 - 7 4 x 4,5 - 10 3 x 15 - 20" | 65 | B24 |
| NEW | | MH24 F23-1 | ● MBA8N23X24 ● MBA8N23B24 | 4 x 1,5 - 3 4 x 3,2 - 6,3 10 x 4 - 7,5 1 x 5,5 - 10,5 1 x 8 - 12,5 3 x 12 - 16,2" | 71 | B24 |
| NEW | | MH24 F23-2 | ● MBA8N24X24 ● MBA8N24B24 | 4 x 1,5 - 3 6 x 3,2 - 6,3 2 x 4 - 7,5 1 x 5,5 - 10,5 10 x 8 - 12,5 | 71 | B24 |
| | | MH24 F27-1 | ● MBA8N27X24 ● MBA8N27B24 | 12 x 3 - 7 10 x 4,5 - 10 5 x 7 - 13 | 70 | B24 |
| | | MH24 F30-1 | ● MBA8N30X10 ● MBA8N30B10 | 30 x 3 - 8 | 71 | B24 |

| | Drawing | Name | Product code | No. of cables x diameter | Weight (g) | Opening size |
|---|---|-------------|--|--|------------|--------------|
| NEW  |  | MH24 F30-2 | <ul style="list-style-type: none"> ● MBA8N30X24 ● MBA8N30B24 | 8 x 1,5 - 3 8 x 3,2 - 5,5 6 x 4 - 7,5 6 x 5 - 8,5 2 x 9,5 - 14,5 | 71 | B24 |
| NEW  |  | MH24 F30-3 | <ul style="list-style-type: none"> ● MBA8N32X24 ● MBA8N32B24 | 6 x 1,5 - 3 4 x 3,2 - 6,3 14 x 4 - 7,5 2 x 8 - 12,5 | 71 | B24 |
| NEW  |  | MH24 F31-1 | <ul style="list-style-type: none"> ● MBA8N31X24 ● MBA8N31B24 | 20 x 3,2 - 6,5 8 x 5 - 10,2 3 x 7,5 - 12 | 71 | B24 |
| NEW  |  | MH24 F42-1 | <ul style="list-style-type: none"> ● MBA8N42X24 ● MBA8N42B24 | 42 x 3,2 - 6,5 | 71 | B24 |
| NEW  |  | MH24 F125-1 | <ul style="list-style-type: none"> ● MBA8N125X24 ● MBA8N125B24 | 123 x 1,5 - 3 2 x 2,5 - 5 | 71 | B24 |

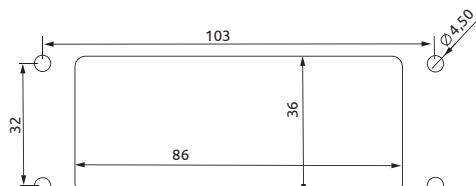


Cutout size

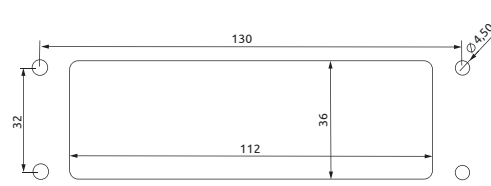
B10



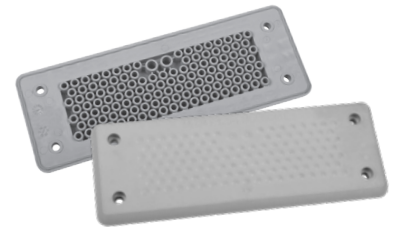
B16



B24



| Cable/tube diameter | MH-10 F12-1 | MH-16 F17-1 | MH-24 F17-2 | MH-24 F17-3 | MH-24 F22-1 | MH-24 F27-1 | MH-24 F30-1 | MH-24 F19-1 | MH-24 F20-1 | MH-24 F23-1 | MH-24 F23-2 | MH-24 F30-2 | MH-24 F30-3 | MH-24 F31-1 | MH-24 F42-1 | MH24 F125-1 |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1.5-3mm | | | | | | | | 5 | 6 | 4 | 4 | 8 | 6 | | | 123 |
| 2.5-5mm | | | | | | | | | | | | | | | | 2 |
| 3-7mm | 5 | 12 | 6 | 4 | 15 | 12 | | | | | | | | | | |
| 3-8mm | | | | | | | 30 | | | | | | | | | |
| 3.2-5.5mm | | | | | | | | | | | | 8 | | | | |
| 3.2-6.3mm | | | | | | | | | | 4 | 6 | | 4 | | | |
| 3.2-6.5mm | | | | | | | | 10 | | | | | | 20 | 42 | |
| 4-7.5mm | | | | | | | | | | 10 | 2 | 6 | 14 | | | |
| 4.5-10mm | | | | | 4 | 10 | | | | | | | | | | |
| 5-8.5mm | | | | | | | | | | | | 6 | | | | |
| 5-10mm | 4 | | 6 | | | | | | | | | | | | | |
| 5-10.2mm | | | | | | | | | | | | | | 8 | | |
| 5.5-10.5mm | | | | | | | | | | 1 | 1 | | | | | |
| 7-13mm | 2 | 5 | | | | 5 | | | | | | | | | | |
| 7-20mm | | | | 12 | | | | | | | | | | | | |
| 7.2-12mm | | | | | | | | | 14 | | | | | | | |
| 7.5-12mm | | | | | | | | | | | | | | 3 | | |
| 8-12.5mm | | | | | | | | | | 1 | 10 | | 2 | | | |
| 9-16mm | 1 | | 5 | | | | | | | | | | | | | |
| 9.5-14.5mm | | | | | | | | | | | | 2 | | | | |
| 10-20mm | | | | 1 | | | | | | | | | | | | |
| 12-16.2mm | | | | | | | | | | 3 | | | | | | |
| 15-20mm | | | | | 3 | | | | | | | | | | | |
| 16-22mm | | | | | | | | 4 | | | | | | | | |



Cable entry plate RMC (IP65)

Patent-pending solution

Very quick, precise and easy way to insert cables

No need to use cutting, pliers, knives or other tools



- Cable gland plate used as a conductor entry point in an electrical cabinet; the enclosure wall thickness can vary from 1 to 4 mm
- For use with diverse cable sizes in both low and medium voltage power applications
- Suitable for rough industrial conditions indoors as well as extreme climatic conditions outdoors

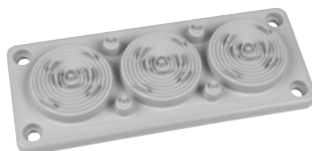
Advantages

- Each cable entry point has a tab that can be peeled off to create an opening for quick insertion and pull-through operations without the need for cutting pliers, knives or other tools
- Pre-embossed, circular entry points guarantee a precise, clean and robust seal around the cable; no additional glands or gaskets required
- A high density of incoming/outgoing conductors can be installed with minimal space requirements

Technical specifications

- Feed-through membrane made of thermoplastic elastomer (TPE) with polypropylene glass fiber reinforcement (PP-GF)
- Cable entry points with various cross-sectional diameters (no pre-attached connectors)
- Available in two colors: black and light grey (RAL7035)
- Designed to match an FL21 flange size cut-out
- Standard M8 bolts used for mounting on the enclosure wall (bolts not included in package)
- High IP65 protection against the ingress of dust and water
- Flammability rating according to UL 94 V-0
- Operational ambient temperature range (material unstressed): -40 °C...+90 °C

NEW



RMC 3 (IP65)

NEW



RMC 17 (IP65)

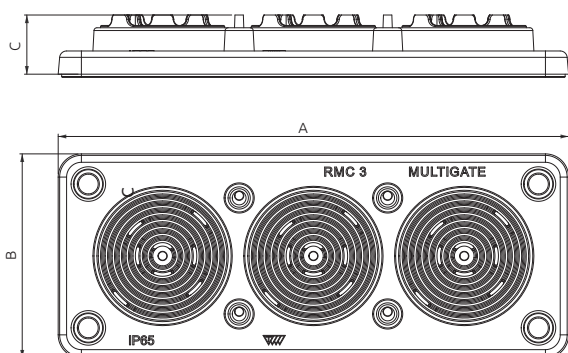
| | | | |
|------------------|---|------------|------------|
| Black (RAL 9005) | ● | MBA9N07B11 | MBA1N17B11 |
| Grey (RAL 7035) | ● | MBA9N07X11 | MBA1N17X11 |

| Technical data | | | |
|---|-----------------------|--|--|
| Number of cables (pcs) x cable diameter (mm) | 4 x 7-10 3 x 12-57 | 4 x 5-7 2 x 10-12 2 x 12-15 9 x 10-30 | |
| Total number of cables | 7 | 17 | |
| Dimensions A / B / C (mm) | 220 / 88 / 25,5 | 220 / 88 / 25,5 | |
| Classification | UL 94 V-0 | UL 94 V-0 | |
| Weight (g) | 131 | 134 | |
| Package (pcs) | 100 | 100 | |

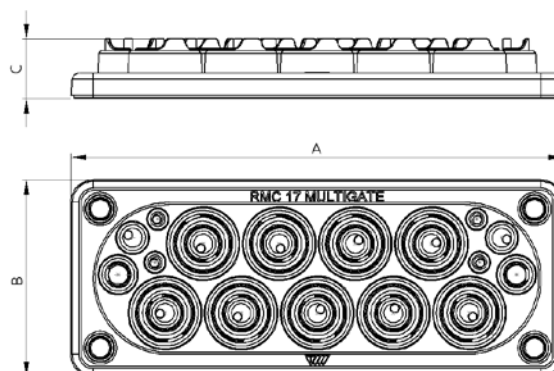
Look more about materials at Comparison of materials on page 162.

Dimensions

RMC 3



RMC 17



- Used as a conductor entry point in an electrical cabinet; the wall thickness can vary from 1-3,5 mm
- For use with diverse cable sizes in both low and medium voltage power applications
- Suitable for rough industrial conditions indoors as well as extreme climatic conditions outdoors

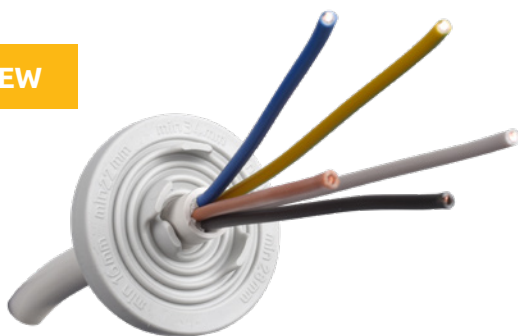
Advantages

- Each RGD has several cable entry points - tabs - that can be peeled off to create an opening for quick insertion and pull-through operations without the need for cutting pliers, knives or other tools
- Each tab has marking of cable diameter matching it written next to it
- Pre-embossed, circular entry points guarantee a precise, clean and robust seal around the cable; no additional glands or gaskets required

Technical specifications

- Made of thermoplastic elastomer (TPE)
- Designed to match M40, M50 and M60 size cut-out and diameter range from 10 to 54 mm:
 - o M40: 10-34 mm cable
 - o M50: 12-44 mm cable
 - o M60: 12-54 mm cable
- Available in two colors: black and light grey (RAL7035)
- High IP64 protection against the ingress of dust and water
- Flammability rating according to UL 94 V-0
- Operational ambient temperature range (material unstressed): -40 °C...+100 °C

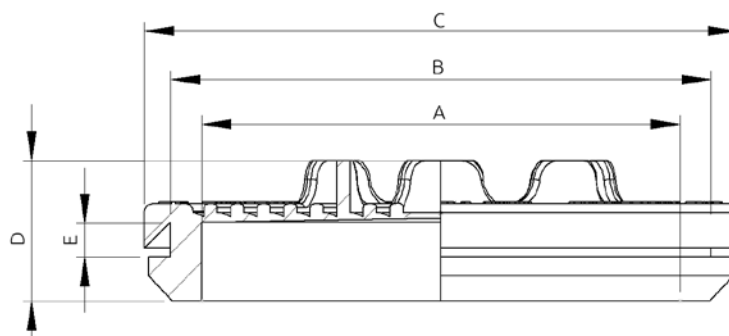
NEW



| Order code | Type | Cable diameter (mm) | Color | Shade | Classification | Dimensions (mm) | | | | | Weight (g) | Package (pcs) |
|------------|-----------|---------------------|-------|------------|----------------|-----------------|-------|-------|-------|----------|------------|---------------|
| | | | | | | A | B | C | D | E | | |
| MBB0540B11 | T-RGDM 40 | 10-34 | Black | ● RAL 9005 | UL 94 V-0 | 34 mm | 40 mm | 47 mm | 16 mm | 1,5-3 mm | 10 | 400 |
| MBB0540X11 | | | Grey | ● RAL 7035 | UL 94 V-0 | | | | | | | |
| MBB0550B11 | T-RGDM 50 | 12-44 | Black | ● RAL 9005 | UL 94 V-0 | 44 mm | 50 mm | 57 mm | 16 mm | 1,5-3 mm | 13,2 | 250 |
| MBB0550X11 | | | Grey | ● RAL 7035 | UL 94 V-0 | | | | | | | |
| MBB0560B11 | T-RGDM 60 | 12-54 | Black | ● RAL 9005 | UL 94 V-0 | 54 mm | 60 mm | 67 mm | 16 mm | 1,5-3 mm | 16,4 | 200 |
| MBB0560X11 | | | Grey | ● RAL 7035 | UL 94 V-0 | | | | | | | |

Look more about materials at Comparison of materials on page 162.

Dimensions



Splitting cable entry plates

Splitting cable entry plates are compact system to route and seal pre-terminated cables

Insertion of pre-terminated cables

UL 94 V-0

Does
**not affect
warranty**
of pre-terminated cables



Splitting cable entry plate for cables with attached connectors

Often with the cables come the connectors and very often the connectors can not be removed and re-attached. The delicate data cables, HDMI's etc. are difficult or impossible to re-join at site. The splitting cable entry plate is the solution that lets the cables be installed with the connectors and on top of that the cables can be changed as often as wanted. Choose splitting cable entry plate for fast, safe and versatile installations.

Splitting cable entry plates SCG and MC are intended for leading through both low and medium power current cables, but also various kinds of tubing.

Splitting cable entry plates SCG and MC are new type of metal and plastic reinforced cable entry plate made of different types of polymers (TPE and PP-GF).

They meet the requirements of IP55 protection class without the need of any additional gaskets or grommets. This makes it very easy to use and provides many benefits for compact installation unit.

Splitting cable entry plates SCG and MC are suitable for both in- and outdoor application and operating temperature range is from -40 °C to +90 °C.

Look more about materials at Comparison of materials on page 162.



SCG 1x3-35 (IP55)

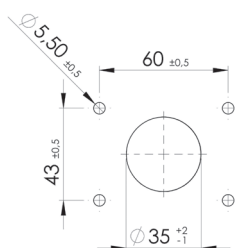
SCG 2x3-35 (IP55)

| | ● MBA4N01B11 | MBA4N02B11 |
|--|--------------|---------------|
| Black UL 94 V-0 | | |
| Technical data | | |
| Service temperature | -40 - +90 | -40 - +90 |
| Dimensions (A / B / C) (mm) | 77 / 60 / 40 | 136 / 60 / 40 |
| Number of cables (pcs) x cable diameter (mm) | 1 x 3-35 | 2 x 3-35 |
| Total number of cables | 1 | 2 |
| Mounting hole size | SCG 1 | SCG 2 |
| Weight (g) | 160 | 263 |
| Package (pcs) | 100 | 50 |

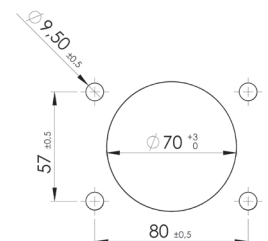
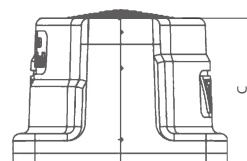
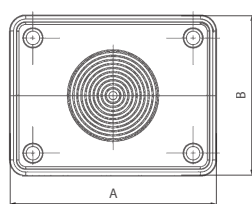
* Only for cables without connectors.

Dimensions

SCG 1



MC 1





MC 1x8-67 (IP55)

MC 2x8-67 (IP55)

MC 2/10 (IP55)

| | | | | |
|-----------------|---|------------|------------|------------|
| Black UL 94 V-0 | ● | MBA4N19B11 | MBA4N28B11 | MBA4N21B11 |
| Black | ● | MBA4N18B11 | - | - |

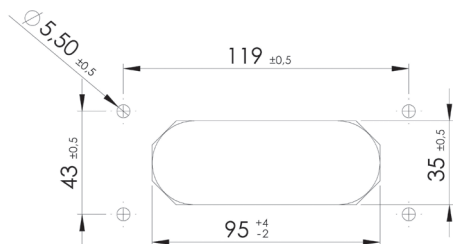
Technical data

| | | | |
|--|---------------|---------------|--|
| Service temperature | -40 - +90 | -40 - +90 | -40 - +90 |
| Dimensions (A / B / C) (mm) | 123 / 93 / 75 | 222 / 93 / 75 | 222 / 93 / 75 |
| Number of cables (pcs) x cable diameter (mm) | 1 x 8 - 67 | 2 x 8 - 67 | 1 x 8 - 67 2 x 8 - 11 2 x 10 - 13 5 x up to 14* |
| Total number of cables | 1 | 2 | 10 |
| Mounting hole size | MC 1 | MC 2 | MC 2 |
| Weight (g) | 870 | 870 | 680 |
| Package (pcs) | 15 | 10 | 10 |

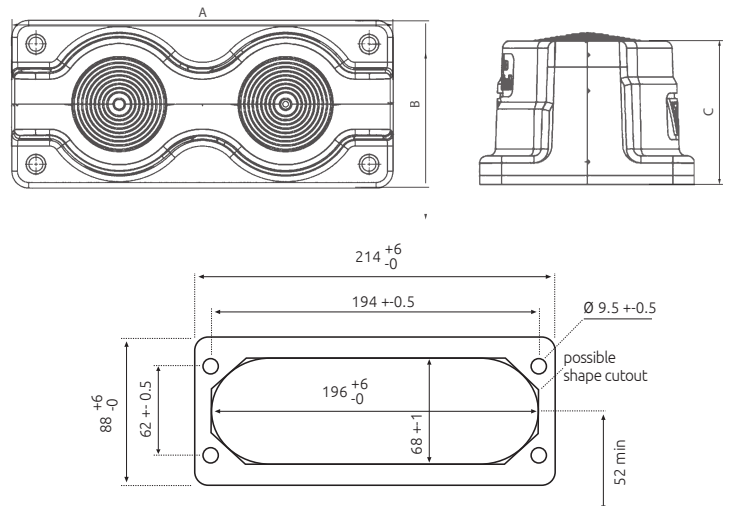
* Only for cables without connector

Dimensions

SCG 2



MC 2



Shear Bolt cable lugs up to 12kV

For applications up to 12kV

Suitable for Al and
Cu conductors

Certified according to

EN61238-1 class A



Shear Bolt lugs are used for terminating aluminium or copper conductors in applications up to 12kV.

Advantages

- Shear Bolt technology allows installation of the lugs using a regular wrench or a spanner, no crimping or other special tools are needed.
- Morek Shear Bolt cable lugs are range taking products that can be used with conductors of varying cross-sections, accommodating a wide range of conductors with only a few items.
- Shear Bolt lugs' specially designed aluminium bodies are made of high-strength aluminium alloy and are tin-plated, allowing their use with both aluminium and copper conductors.
- Bolts made of aluminium or tin-plated brass are designed to break at the exact torque required for best electrical connection.
- Shear Bolts are treated with special antioxidation grease to ensure the lubrication and eliminate all kinds of oxidation in places of electrical contact.
- All Morek Shear Bolt lugs are watertight and suitable for indoor and outdoor installation, to be used with solid, stranded, sector shaped and round conductors with plastic or oil-impregnated paper isolation.

- Shear Bolt lugs are compatible with most termination kits by many manufacturers. Compact design requires less installation space, especially for larger sizes.

Certification and regulations

Tested according to IEC61238-1 class A

Technical specifications

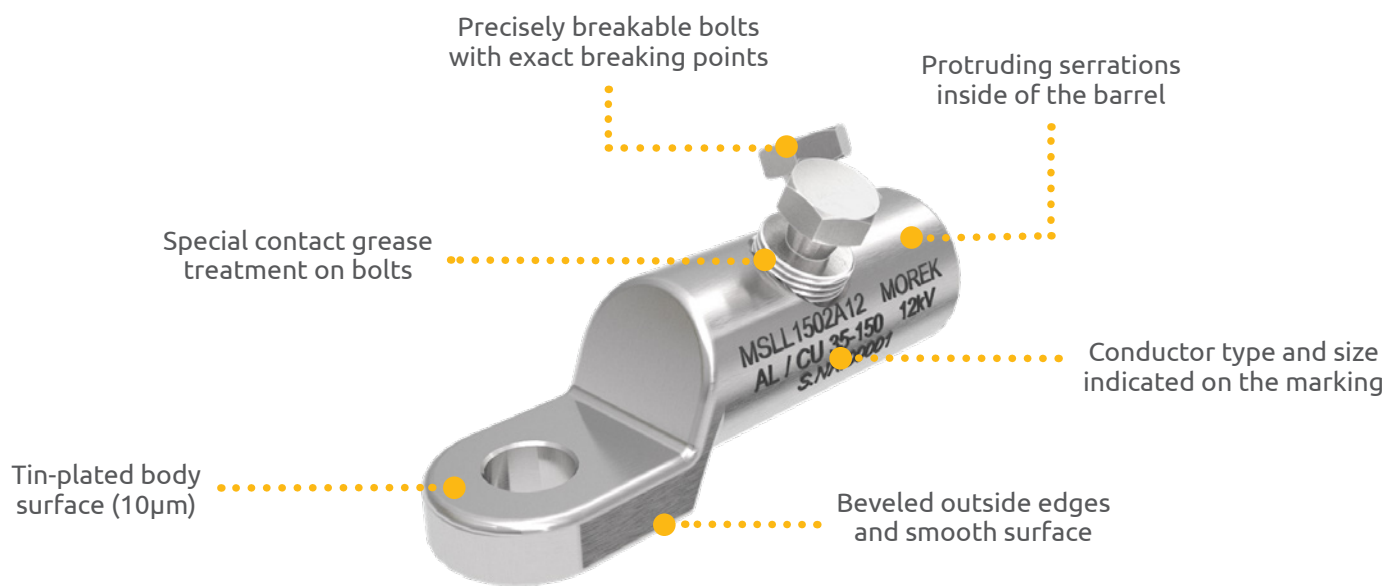
- Nominal voltage up to 12kV
- Suitable for copper and aluminium conductors
- Bolts are treated with antioxidation grease

Materials

Lug body: tin-plated high-strength aluminium alloy

Aluminium-bolt cable lug bolts: aluminium alloy

Brass-bolt cable lug bolts: tin-plated brass



EN 61238-1:2003 divides cable lugs and connectors into two classes:

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electrical distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.

Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.



| Palm opening size | MSSL35 | MSSL50 | MSSL51 | MSSL70 | MSSL95 |
|-------------------|-------------|-------------|-------------|-------------|-------------|
| M10 | MSSL0351A10 | MSSL0501A10 | MSSL0502A10 | - | - |
| M12 | MSSL0351A12 | MSSL0501A12 | MSSL0502A12 | MSSL0702A12 | MSSL0951A12 |
| M16 | - | - | - | - | - |

Technical data

Conductor cross-section Al (mm²)

| | | | | | |
|-----------------------------|---------|---------|---------|---------|---------|
| RE Round, solid | 6 - 35 | 6 - 50 | 6 - 50 | 16 - 70 | 16 - 95 |
| RM Round, stranded | 10 - 35 | 10 - 50 | 10 - 50 | 16 - 70 | 16 - 95 |
| SE Sector shaped, solid | 16 - 35 | 16 - 50 | 16 - 50 | 16 - 70 | 16 - 95 |
| SM Sector shaped, stranded | 16 - 25 | 16 - 35 | 16 - 35 | 16 - 70 | 16 - 95 |

Conductor cross-section Cu (mm²)

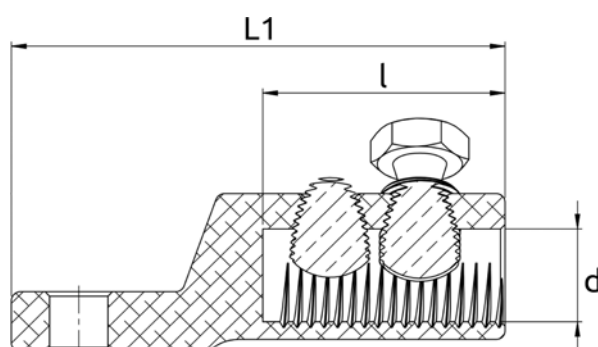
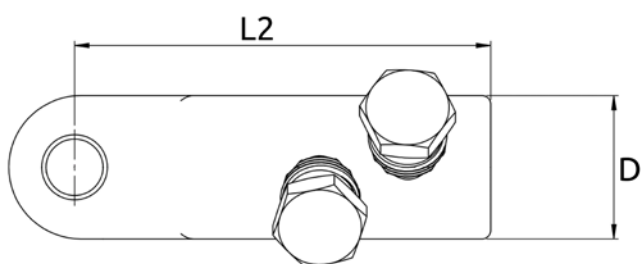
| | | | | | |
|-----------------------------|---------|--------|--------|---------|---------|
| RM Round, stranded | 16 - 35 | 6 - 50 | 6 - 50 | 16 - 70 | 25 - 95 |
| SM Sector shaped, stranded | 16 - 35 | 6 - 50 | 6 - 50 | 16 - 70 | 25 - 95 |
| RE Round, solid | 6 - 25 | 6 - 35 | 6 - 35 | 6 - 35 | 10 - 35 |

| | | | | | |
|-------------------|--------------|--------------|--------------|--------------|--------------|
| No. of bolts Ø mm | 1 / M10 | 1 / M10 | 2 / M10 | 2 / M12 | 1 / M12 |
| L1 / L2 / l | 53 / 40 / 18 | 62 / 51 / 28 | 62 / 51 / 30 | 90 / 75 / 40 | 65 / 52 / 24 |
| D / d | 16 / 9 | 20 / 11 | 20 / 11 | 22 / 12 | 25 / 14 |
| Weight (g) | 23 | 37 | 42 | 62 | 65 |
| Package (pcs) | 50 | 50 | 50 | 50 | 25 |

Bolts: aluminium alloy

Suitable for Al/Cu applications

Dimensions












| Palm opening size | MSSL96 | MSSL150 | MSSL240 | MSSL300 |
|-------------------|-------------|-------------|-------------|-------------|
| M10 | - | - | - | - |
| M12 | MSSL0952A12 | MSSL1502A12 | MSSL2402A12 | MSSL3002A12 |
| M16 | - | - | MSSL2402A16 | MSSL3002A16 |

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|--|---------|----------|----------|-----------|
| RE  Round, solid | 16 - 95 | 35 - 150 | 50 - 240 | 120 - 300 |
| RM  Round, stranded | 16 - 95 | 35 - 150 | 50 - 240 | 120 - 300 |
| SE  Sector shaped, solid | 16 - 95 | 35 - 150 | 50 - 240 | 120 - 300 |
| SM  Sector shaped, stranded | 16 - 95 | 35 - 120 | 50 - 240 | 120 - 300 |

Conductor cross-section Cu (mm²)

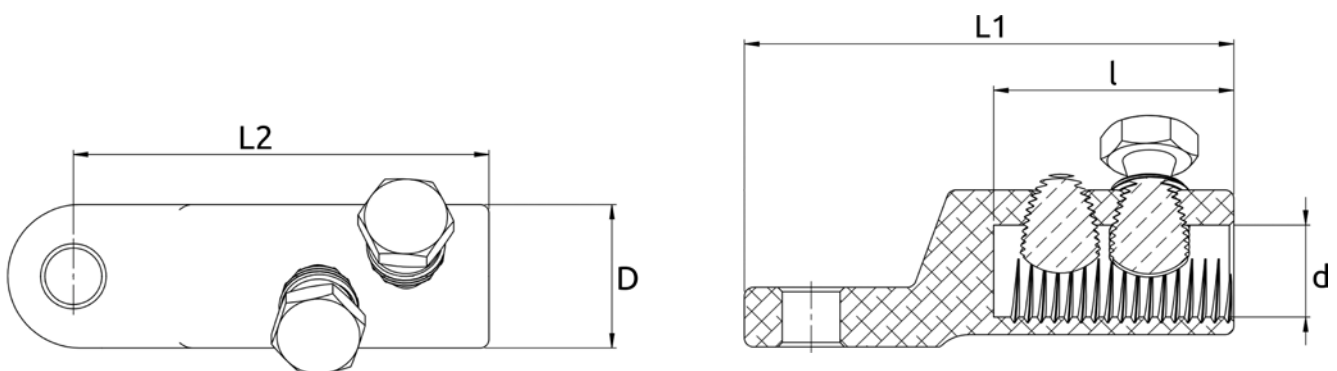
| | | | | |
|--|---------|----------|----------|-----------|
| RM  Round, stranded | 25 - 95 | 35 - 150 | 50 - 240 | 120 - 300 |
| SM  Sector shaped, stranded | 25 - 95 | 35 - 150 | 50 - 240 | 120 - 300 |
| RE  Round, solid | 10 - 35 | 25 - 35 | - | - |

| | | | | |
|-------------------|--------------|---------------|---------------|----------------|
| No. of bolts Ø mm | 2 / M12 | 2 / M16 | 2 / M18 | 2 / M22 |
| L1 / L2 / l | 76 / 63 / 32 | 100 / 85 / 52 | 115 / 97 / 57 | 123 / 104 / 59 |
| D / d | 25 / 15 | 29 / 18 | 35 / 22 | 38 / 24,5 |
| Weight (g) | 82 | 120 | 250 | 280 |
| Package (pcs) | 25 | 40 | 15 | 10 |

Bolts: aluminium alloy

Suitable for Al/Cu applications

Dimensions



Shear Bolt cable connectors up to 12kV

For applications up to 12kV

Suitable for Al and
Cu conductors

Certified according to

EN61238-1 class A



Shear Bolt connectors are used for joining aluminium or copper conductors in applications up to 12kV.

Advantages

- Shear Bolt technology allows installation of the lugs using a regular wrench or a spanner, no crimping or other special tools are needed.
- Morek Shear Bolt cable connectors are range taking products that can be used with conductors of varying cross-sections, accommodating a wide range of conductors with only a few items.
- Shear Bolt connectors' specially designed aluminium bodies are made of high-strength aluminium alloy and are tin-plated, allowing their use with both aluminium and copper conductors.
- Bolts made of aluminium or tin-plated brass are designed to break at the exact torque required for best electrical connection.
- Shear Bolts are treated with special antioxidation grease to ensure the lubrication and eliminate all kinds of oxidation in places of electrical contact.
- All Morek Shear Bolt lugs are watertight and suitable for indoor and outdoor installation, to be used with solid, stranded, sector shaped and round conductors with plastic or oil-impregnated paper isolation.
- Shear Bolt connectors are compatible with most termination kits by many manufacturers. Compact design requires less installation space, especially for larger sizes.

Certification and regulations

Tested according to IEC61238-1 class A

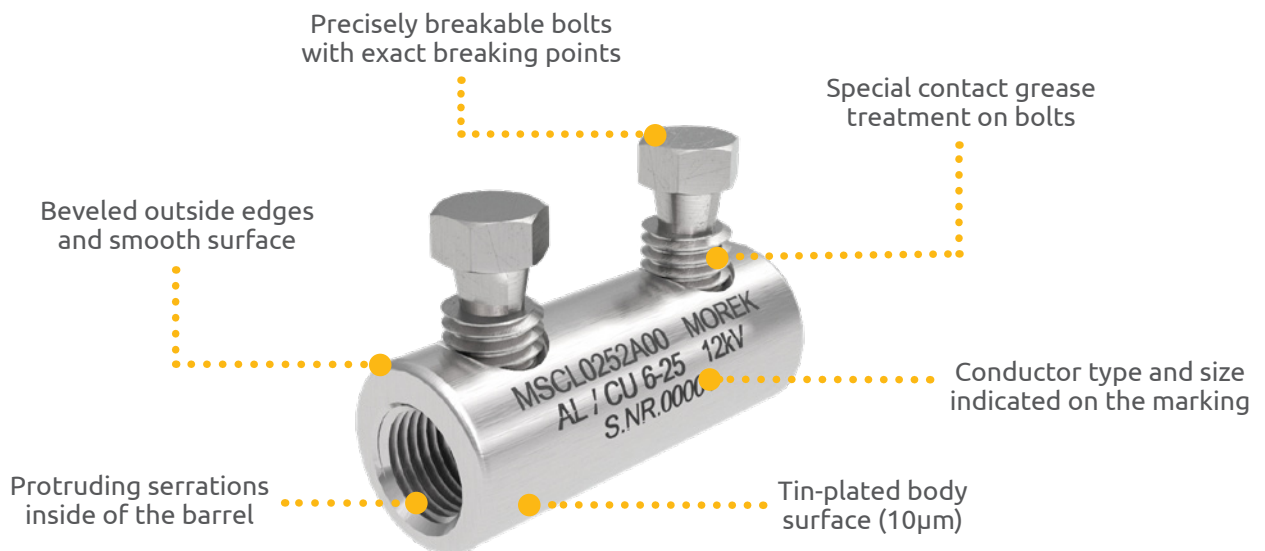
Technical specifications

- Nominal voltage up to 12kV
- Suitable for copper and aluminium conductors
- Bolts are treated with antioxidation grease

Materials

Connector body: tin-plated high-strength aluminium alloy

Aluminium-bolt cable connector bolts: aluminium alloy



EN 61238-1:2003 divides cable lugs and connectors into two classes:

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electrical distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.

Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.



MSCL16



MSCL25



MSCL50



MSCL95

| | | | | |
|--|-------------|-------------|-------------|-------------|
| | MSCL0162A00 | MSCL0252A00 | MSCL0502A00 | MSCL0952A00 |
|--|-------------|-------------|-------------|-------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|-----------------------------|----------|---------|---------|---------|
| RE Round, solid | 1,5 - 16 | 6 - 35 | 10 - 50 | 25 - 95 |
| RM Round, stranded | 1,5 - 16 | 10 - 35 | 10 - 50 | 25 - 95 |
| SE Sector shaped, solid | 1,5 - 16 | 16 - 35 | 16 - 50 | 25 - 95 |
| SM Sector shaped, stranded | 1,5 - 16 | 16 - 25 | 16 - 35 | 25 - 95 |

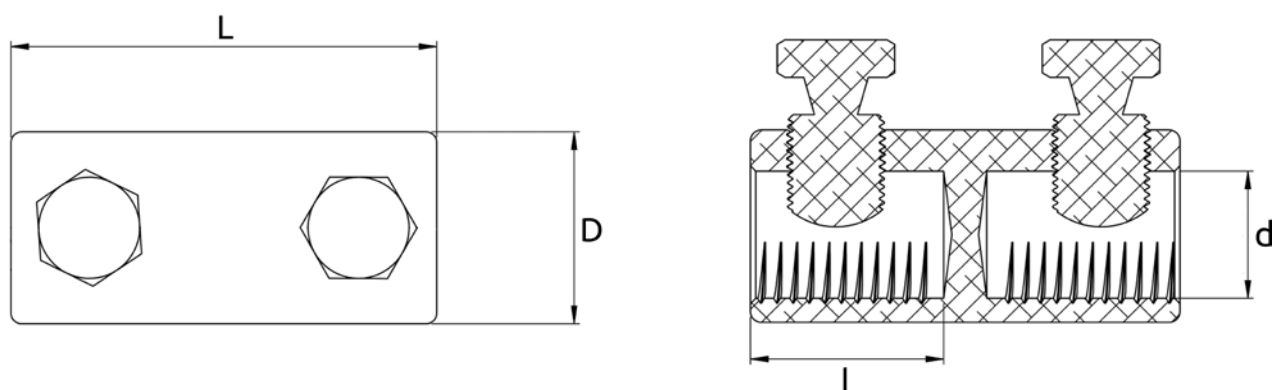
Conductor cross-section Cu (mm²)

| | | | | |
|-----------------------------|----------|---------|---------|---------|
| RM Round, stranded | 1,5 - 16 | 16 - 35 | 16 - 50 | 25 - 95 |
| SM Sector shaped, stranded | 1,5 - 16 | 16 - 35 | 16 - 50 | 25 - 95 |
| RE Round, solid | 1,5 - 16 | 6 - 25 | 16 - 35 | 25 - 35 |

| | | | | |
|-------------------|---------|---------|---------|---------|
| No. of bolts Ø mm | 2 / M6 | 2 / M8 | 2 / M10 | 2 / M12 |
| L / l | 30 / 14 | 40 / 17 | 37 / 17 | 54 / 24 |
| D / d | 12 / 6 | 16 / 9 | 18 / 10 | 25 / 14 |
| Weight (g) | 10 | 22 | 26 | 47 |
| Package (pcs) | 100 | 50 | 50 | 50 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions





MSCL150

MSCL240




MSCL241

MSCL300




| | | | | |
|--|-------------|-------------|-------------|-------------|
| | MSCL1502A00 | MSCL2402A00 | MSCL2404A00 | MSCL3004A00 |
|--|-------------|-------------|-------------|-------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | | |
|---|-------------------------|----------|-----------|----------|-----------|
| RE  | Round, solid | 25 - 150 | 120 - 240 | 50 - 240 | 150 - 300 |
| RM  | Round, stranded | 25 - 150 | 120 - 240 | 50 - 240 | 150 - 300 |
| SE  | Sector shaped, solid | 25 - 150 | 120 - 240 | 50 - 240 | 150 - 300 |
| SM  | Sector shaped, stranded | 25 - 120 | 120 - 240 | 50 - 240 | 150 - 300 |

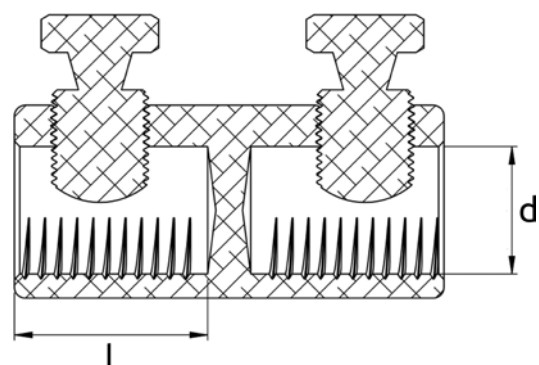
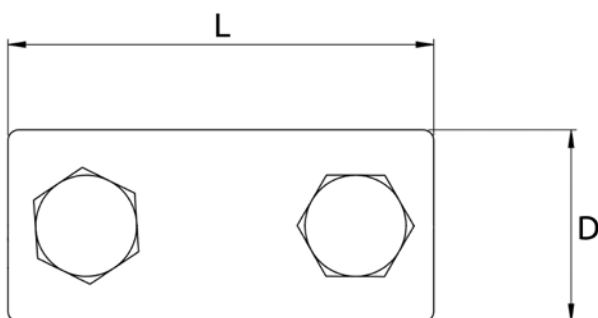
Conductor cross-section Cu (mm²)

| | | | | | |
|--|-------------------------|----------|-----------|----------|-----------|
| RM  | Round, stranded | 25 - 120 | 120 - 240 | 50 - 240 | 150 - 300 |
| SM  | Sector shaped, stranded | 25 - 35 | - | - | - |
| RE  | Round, solid | - | - | - | - |

| | | | | |
|-------------------|---------|---------|----------|----------|
| No. of bolts Ø mm | 2 / M16 | 2 / M18 | 4 / M18 | 4 / M22 |
| L / l | 70 / 30 | 80 / 36 | 120 / 56 | 112 / 52 |
| D / d | 28 / 17 | 36 / 24 | 35 / 22 | 38 / 24 |
| Weight (g) | 87 | 162 | 220 | 265 |
| Package (pcs) | 35 | 25 | 20 | 20 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions



Shear Bolt pin lugs

For applications up to 12kV

Suitable for Al and Cu conductors

Certified according to

EN61238-1 class A





MSPL095





MSPL150

MSPL240




| | | | |
|--|-------------|-------------|-------------|
| | MSPL0952A00 | MSPL1502A00 | MSPL2402A00 |
|--|-------------|-------------|-------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|--|-------------------------|---------|----------|-----------|
| RE  | Round, solid | 25 - 95 | 35 - 150 | 120 - 240 |
| RM  | Round, stranded | 25 - 95 | 35 - 150 | 120 - 240 |
| SE  | Sector shaped, solid | 25 - 95 | 35 - 150 | 120 - 240 |
| SM  | Sector shaped, stranded | 25 - 95 | 35 - 120 | 120 - 240 |

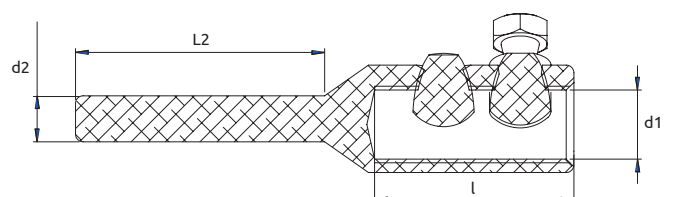
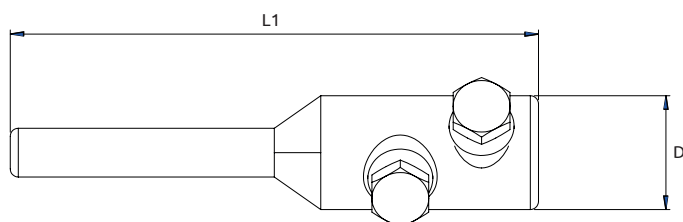
Conductor cross-section Cu (mm²)

| | | | | |
|--|-------------------------|---------|----------|-----------|
| RM  | Round, stranded | 25 - 95 | 35 - 150 | 120 - 240 |
| SM  | Sector shaped, stranded | 25 - 95 | 35 - 120 | 120 - 240 |
| RE  | Round, solid | 25 - 35 | 35 | - |

| | | | |
|-------------------|---------------|---------------|-----------------|
| No. of bolts Ø mm | 2 / M12 | 2 / M16 | 2 / M18 |
| L1 / L2 / l | 120 / 65 / 43 | 130 / 65 / 52 | 135 / 65 / 56,5 |
| D / d1 / d2 | 24 / 14 / 10 | 28 / 18 / 12 | 35 / 22 / 15 |
| Weight (g) | 65 | 95 | 156 |
| Package (pcs) | 30 | 25 | 20 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions



Shear Bolt cable lugs up to 36kV

For applications up to 36kV

Suitable for Al and
Cu conductors

Certified according to

EN61238-1 class A



Shear Bolt lugs are used for terminating aluminium or copper conductors in applications up to 36kV.

Advantages

- Shear Bolt technology allows installation of the lugs using a regular wrench or a spanner, no crimping or other special tools are needed.
- Morek Shear Bolt cable lugs are range taking products that can be used with conductors of varying cross-sections, accommodating a wide range of conductors with only a few items.
- Shear Bolt lugs' specially designed aluminium bodies are made of high-strength aluminium alloy and are tin-plated, allowing their use with both aluminium and copper conductors.
- Bolts made of aluminium or tin-plated brass are designed to break at the exact torque required for best electrical connection.
- Shear Bolts and barrels of lugs are treated with special antioxidation grease to ensure the lubrication and eliminate all kinds of oxidation in places of electrical contact.
- Conductor centering rings and instruction manual are supplied together with each lug to ensure proper installation.
- All Morek Shear Bolt lugs are watertight and suitable for indoor and outdoor installation, to be used with solid, stranded, sector shaped and round conductors with plastic or oil-impregnated paper isolation.

- Shear Bolt lugs are compatible with most termination kits by many manufacturers. Compact design requires less installation space, especially for larger sizes.

Certification and regulations

Tested according to IEC61238-1 class A

Technical specifications

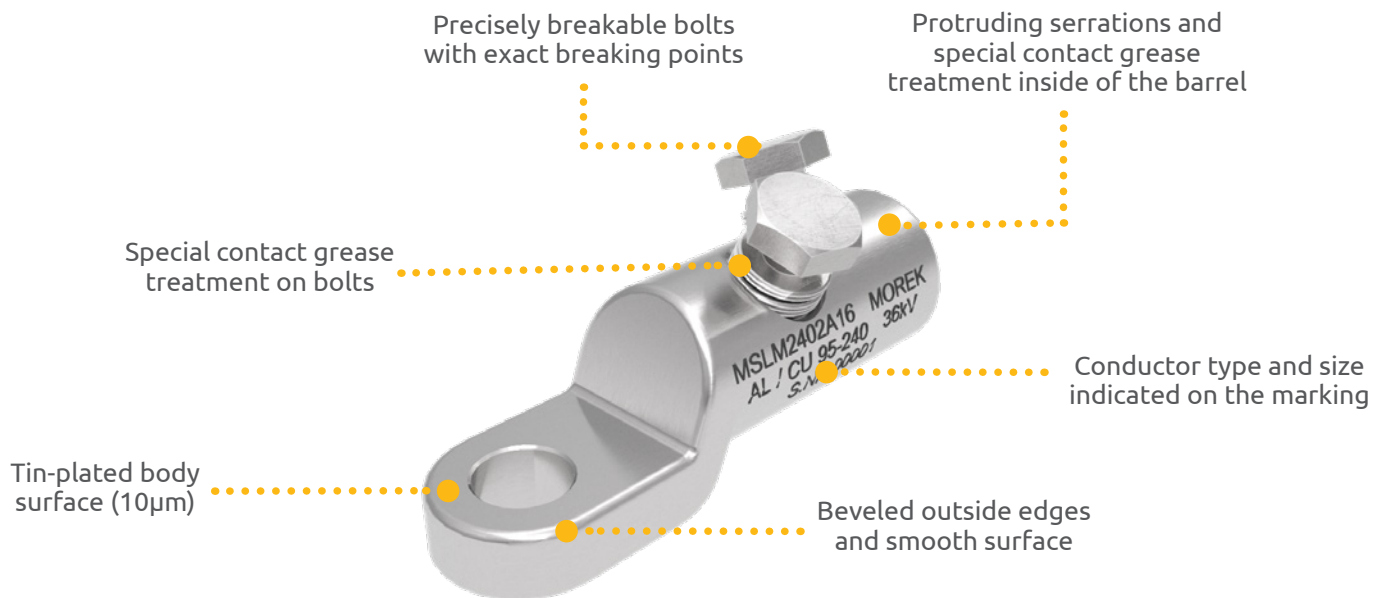
- Nominal voltage up to 36kV
- Suitable for copper and aluminium conductors
- Bolts and barrels are treated with antioxidation grease
- Conductor centering rings included

Materials

Lug body: tin-plated high-strength aluminium alloy

Aluminium-bolt cable lug bolts: aluminium alloy

Brass-bolt cable lug bolts: tin-plated brass



EN 61238-1:2003 divides cable lugs and connectors into two classes:

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electrical distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.

Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.



| Palm opening size | MSLM95 | MSLM150 | MSLM240 | MSLM300 |
|-------------------|-------------|-------------|-------------|-------------|
| M12 | MSLM0951A12 | MSLM1501A12 | MSLM2402A12 | MSLM3002A12 |
| M16 | - | - | MSLM2402A16 | MSLM3002A16 |
| M20 | - | - | - | - |

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|-----------------------------|---------|----------|----------|-----------|
| RE Round, solid | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| RM Round, stranded | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| SM Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

Conductor cross-section Cu (mm²)

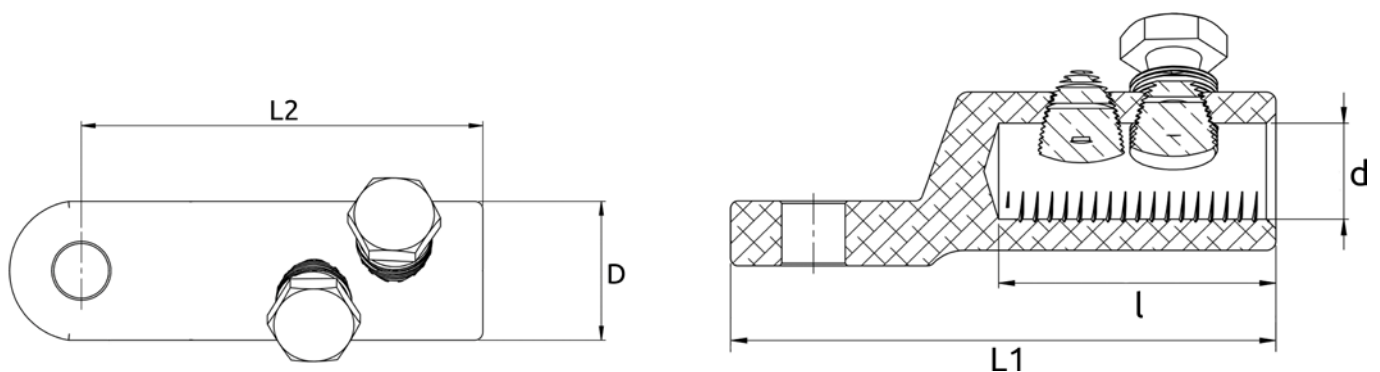
| | | | | |
|-----------------------------|---------|----------|----------|-----------|
| RM Round, stranded | 16 - 70 | 50 - 120 | 95 - 240 | 120 - 300 |
| SM Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

| | | | | |
|-------------------|--------------|--------------|---------------|----------------|
| No. of bolts Ø mm | 1 / M12 | 1 / M14 | 2 / M18 | 2 / M22 |
| L1 / L2 / l | 76 / 60 / 32 | 95 / 78 / 42 | 112 / 95 / 57 | 125 / 105 / 67 |
| D / d | 24 / 9,5 | 29 / 16 | 33 / 20 | 38 / 24,5 |
| Weight (g) | 60 | 122 | 182 | 246 |
| Package (pcs) | 25 | 25 | 15 | 14 |

Bolts: aluminium alloy

Suitable for Al/Cu applications

Dimensions










| Palm opening size | MSLM400 | MSLM630 | MSLM1000 |
|-------------------|-------------|-------------|--------------|
| M12 | MSLM4003A12 | MSLM6303A12 | - |
| M16 | MSLM4003A16 | MSLM6303A16 | MSLM10004A16 |
| M20 | - | - | MSLM10004A20 |
| 2 x M12 | - | - | - |

Technical data

Conductor cross-section Al (mm²)

| | | | |
|--|-----------|-----------|------------|
| RE  Round, solid | 185 - 400 | 400 - 630 | 630 - 1000 |
| RM  Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM  Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

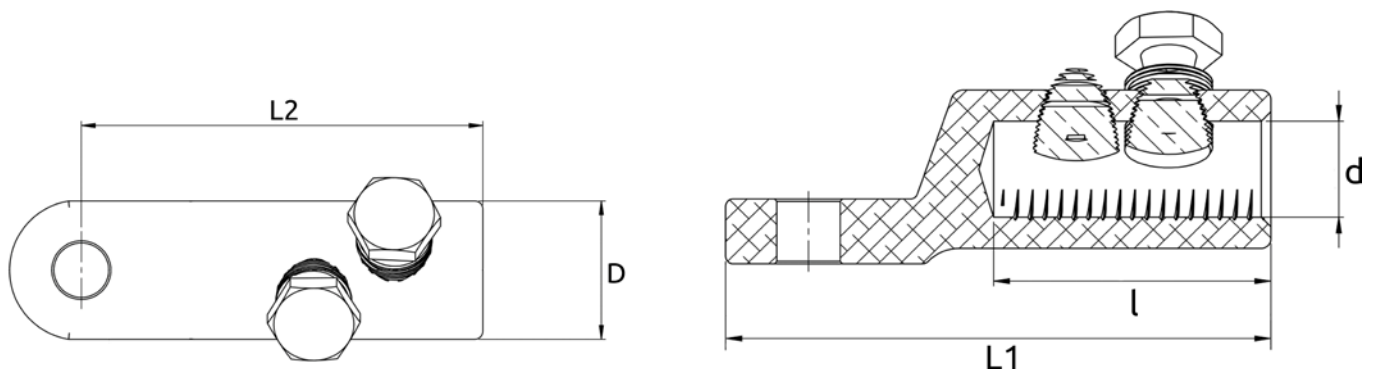
Conductor cross-section Cu (mm²)

| | | | |
|--|-----------|-----------|------------|
| RM  Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM  Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

| | | | |
|-------------------|----------------|----------------|-----------------|
| No. of bolts Ø mm | 3 / M22 | 3 / M22 | 4 / M22 long |
| L1 / L2 / l | 140 / 120 / 79 | 163 / 136 / 94 | 194 / 161 / 105 |
| D / d | 42 / 26 | 52 / 34 | 65 / 41 |
| Weight (g) | 367 | 605 | 1095 |
| Package (pcs) | 10 | 6 | 3 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions



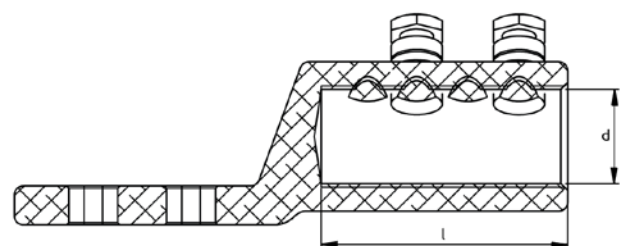
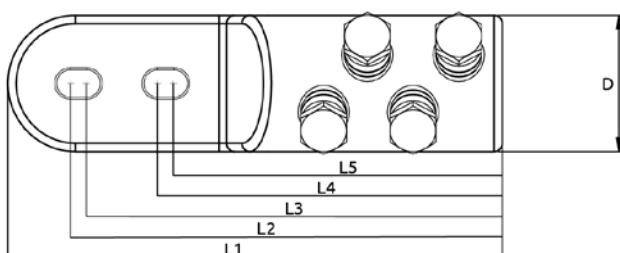


| Palm opening size | MSLM400 | MSLM630 | MSLM1000 |
|---|-----------------------|-----------------------|-------------------------------|
| M12 x 20 x 2 | MSLM4003A32 | MSLM6303A32 | MSLM10004A32 |
| Technical data | | | |
| Conductor cross-section Al (mm ²) | | | |
| RE Round, solid | 185 - 400 | 400 - 630 | 630 - 1000 |
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |
| Conductor cross-section Cu (mm ²) | | | |
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |
| No. of bolts Ø mm | 3 / M22 | 3 / M22 | 4 / M22 long |
| L1 / l (mm) | 180 / 82 | 205 / 94,5 | 238 / 106 |
| L2 / L3 / L4 / L5 | 159 / 153 / 121 / 115 | 180 / 174 / 142 / 136 | 207,5 / 200,5 / 165,5 / 158,5 |
| D / d (mm) | 42 / 26 | 52 / 34 | 65 / 41 |
| Weight (g) | 395 | 655 | 1200 |
| Package (pcs) | 10 | 6 | 3 |

Bolts: aluminium alloy

Suitable for Al/Cu applications

Dimensions










| Palm opening size | MSLM95 | MSLM150 | MSLM240 | MSLM300 |
|-------------------|-------------|-------------|-------------|-------------|
| M12 | MSLM0951B12 | MSLM1501B12 | MSLM2402B12 | MSLM3002B12 |
| M16 | - | - | MSLM2402B16 | MSLM3002B16 |
| M20 | - | - | - | - |

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|---|---------|----------|----------|-----------|
| RE  Round, solid | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| RM  Round, stranded | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| SM  Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

Conductor cross-section Cu (mm²)

| | | | | |
|--|---------|----------|----------|-----------|
| RM  Round, stranded | 16 - 70 | 50 - 120 | 95 - 240 | 120 - 300 |
| SM  Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

| | | | | |
|-------------------|--------------|--------------|---------------|----------------|
| No. of bolts Ø mm | 1 / M12 | 1 / M14 | 2 / M18 | 2 / M22 |
| L1 / L2 / l | 76 / 60 / 32 | 95 / 78 / 42 | 112 / 95 / 57 | 125 / 105 / 67 |
| D / d | 24 / 9,5 | 29 / 16 | 33 / 20 | 38 / 24,5 |
| Weight (g) | 70 | 145 | 230 | 320 |
| Package (pcs) | 25 | 25 | 15 | 14 |

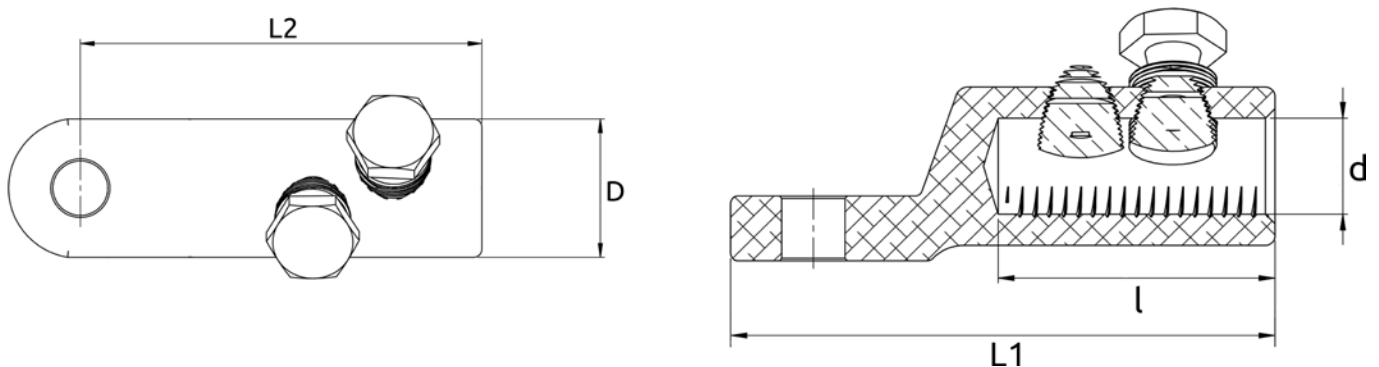
Bolts: tin-plated brass

Suitable for Al/Cu applications

36kV lugs are also available with brass inner hexagon bolts - to order, replace letter B of the product code with D.

For example: MSLM0951D12.

Dimensions





| Palm opening size | MSLM400 | MSLM630 | MSLM1000 |
|-------------------|-------------|-------------|--------------|
| M12 | MSLM4003B12 | MSLM6303B12 | - |
| M16 | MSLM4003B16 | MSLM6303B16 | MSLM10004B16 |
| M20 | - | - | MSLM10004B20 |

Technical data

Conductor cross-section Al (mm²)

| | | | |
|-----------------------------|-----------|-----------|------------|
| RE Round, solid | 185 - 400 | 400 - 630 | 630 - 1000 |
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

Conductor cross-section Cu (mm²)

| | | | |
|-----------------------------|-----------|-----------|------------|
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

| | | | |
|-------------------|----------------|----------------|-----------------|
| No. of bolts Ø mm | 3 / M22 | 3 / M22 | 4 / M22 long |
| L1 / L2 / l | 140 / 120 / 79 | 163 / 136 / 94 | 194 / 161 / 105 |
| D / d | 42 / 26 | 52 / 34 | 65 / 41 |
| Weight (g) | 510 | 720 | 1300 |
| Package (pcs) | 10 | 6 | 3 |

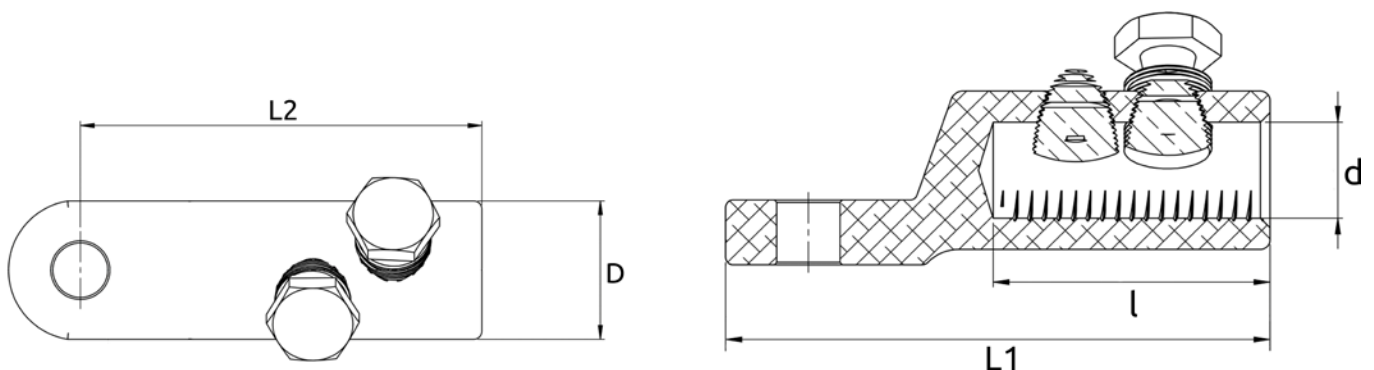
Bolts: tin-plated brass

Suitable for Al/Cu applications

36kV lugs are also available with brass inner hexagon bolts - to order, replace letter B of the product code with D.

For example: MSLM0951D12.

Dimensions



Shear Bolt cable connectors up to 36kV

For applications up to 36kV

Suitable for Al and Cu conductors

Certified according to

EN61238-1 class A



Shear Bolt connectors are used for joining aluminium or copper conductors in applications up to 36kV.

Advantages

- Shear Bolt technology allows installation of the lugs using a regular wrench or a spanner, no crimping or other special tools are needed.
- Morek Shear Bolt cable connectors are range taking products that can be used with conductors of varying cross-sections, accommodating a wide range of conductors with only a few items.
- Shear Bolt connectors' specially designed aluminium bodies are made of high-strength aluminium alloy and are tin-plated, allowing their use with both aluminium and copper conductors.
- Bolts made of aluminium or tin-plated brass are designed to break at the exact torque required for best electrical connection.
- Shear Bolts are treated with special antioxidation grease to ensure the lubrication and eliminate all kinds of oxidation in places of electrical contact.
- All Morek Shear Bolt lugs are watertight and suitable for indoor and outdoor installation, to be used with solid, stranded, sector shaped and round conductors with plastic or oil-impregnated paper isolation.

- Shear Bolt connectors are compatible with most termination kits by many manufacturers. Compact design requires less installation space, especially for larger sizes.

Certification and regulations

Tested according to IEC61238-1 class A

Technical specifications

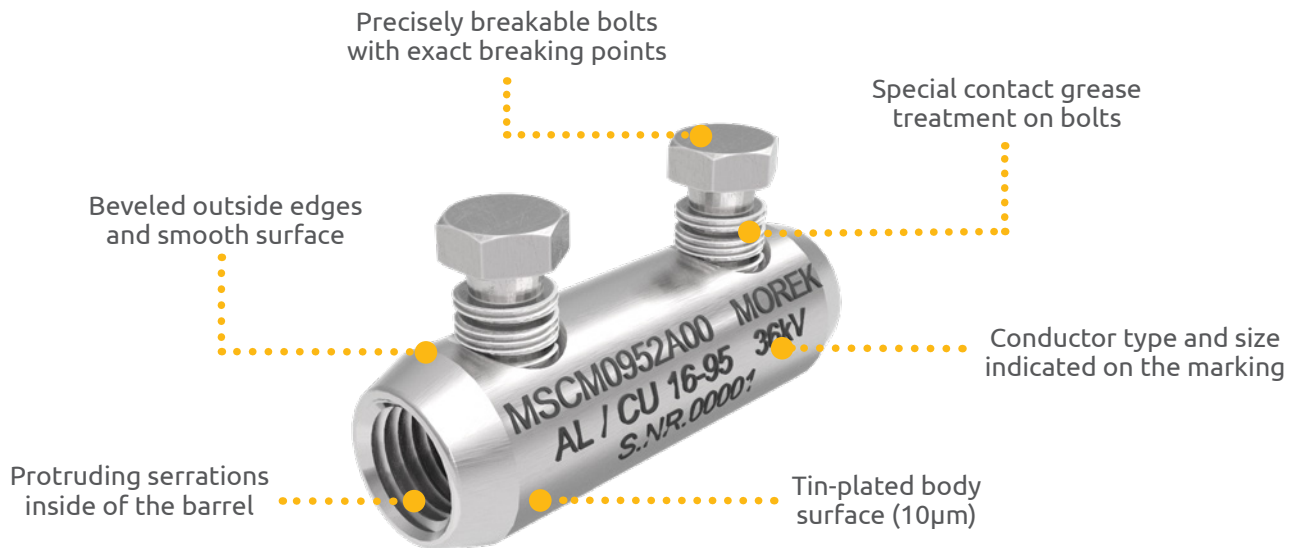
- Nominal voltage up to 36kV
- Suitable for copper and aluminium conductors
- Bolts and barrels are treated with antioxidation grease
- Conductor centering rings included

Materials

Connector body: tin-plated high-strength aluminium alloy

Aluminium-bolt cable connector bolts: aluminium alloy

Brass-bolt cable connector bolts: tin-plated brass



EN 61238-1:2003 divides cable lugs and connectors into two classes:

Class A (heat cycle and **short-circuit tested**) - These are connectors intended for electrical distribution or industrial networks in which they can be subjected to short-circuits of relatively high intensity and duration. Therefore, Class A connectors are suitable for most applications.




Class B (heat cycle tests only, **not short-circuit tested**) - These are connectors for networks in which overloads or short-circuits are rapidly cleared by the installed protective devices, e.g. **fast-acting fuses**.





| | | | | |
|--|-------------|-------------|-------------|-------------|
| | MSCM0952A00 | MSCM1502A00 | MSCM2404A00 | MSCM3004A00 |
|--|-------------|-------------|-------------|-------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | | |
|--|-------------------------|---------|----------|----------|-----------|
| RE  | Round, solid | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| RM  | Round, stranded | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| SM  | Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

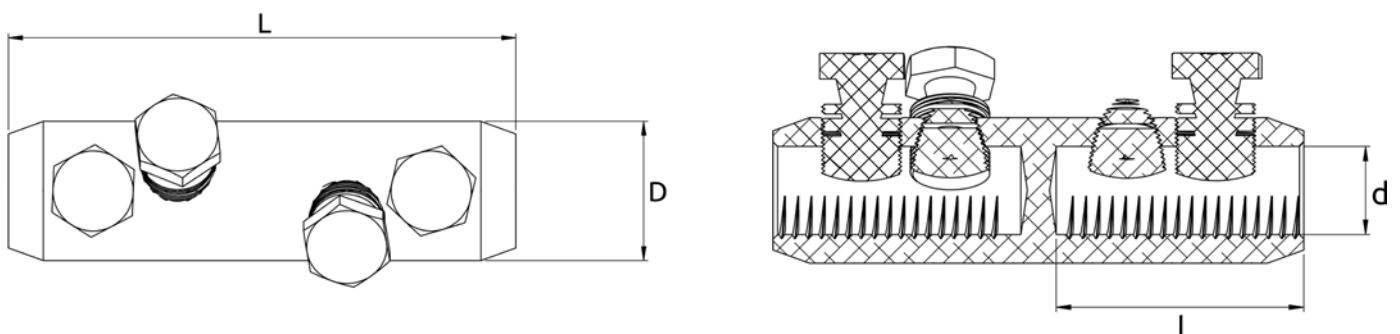
Conductor cross-section Cu (mm²)

| | | | | | |
|--|-------------------------|---------|----------|----------|-----------|
| RM  | Round, stranded | 16 - 70 | 50 - 120 | 95 - 240 | 120 - 300 |
| SM  | Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

| | | | | |
|-------------------|---------|---------|----------|-----------|
| No. of bolts Ø mm | 2 / M12 | 2 / M14 | 4 / M18 | 4 / M22 |
| L / l | 70 / 33 | 80 / 35 | 120 / 56 | 142 / 67 |
| D / d | 24 / 14 | 30 / 16 | 33 / 20 | 38 / 24,5 |
| Weight (g) | 74 | 146 | 230 | 400 |
| Package (pcs) | 30 | 25 | 15 | 10 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions





| | | | |
|--|-------------|-------------|--------------|
| | MSCM4006A00 | MSCM6306A00 | MSCM10008A00 |
|--|-------------|-------------|--------------|

Technical data

Conductor cross-section Al (mm²)

| | | | |
|-----------------------------|-----------|-----------|------------|
| RE Round, solid | 185 - 400 | 400 - 630 | 630 - 1000 |
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

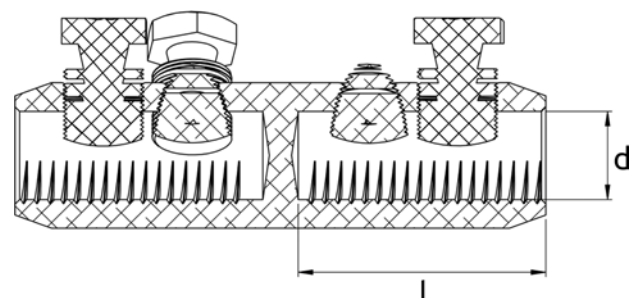
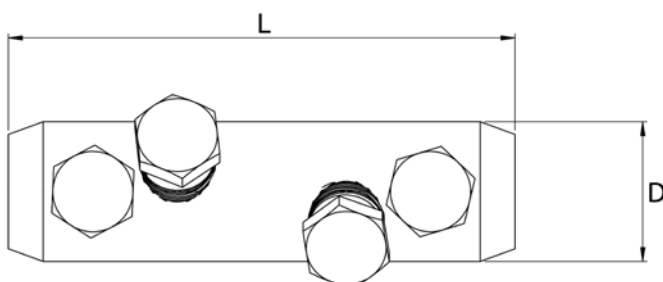
Conductor cross-section Cu (mm²)

| | | | |
|-----------------------------|-----------|-----------|------------|
| RM Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

| | | | |
|-------------------|----------|----------|--------------|
| No. of bolts Ø mm | 6 / M22 | 6 / M22 | 8 / M22 long |
| L / l | 170 / 82 | 200 / 94 | 220 / 105 |
| D / d | 42 / 26 | 52 / 34 | 65 / 41 |
| Weight (g) | 580 | 815 | 1340 |
| Package (pcs) | 5 | 3 | 2 |

Bolts: aluminium alloy
Suitable for Al/Cu applications

Dimensions










| | | | | |
|--|-------------|-------------|-------------|-------------|
| | MSCM0952B00 | MSCM1502B00 | MSCM2404B00 | MSCM3004B00 |
|--|-------------|-------------|-------------|-------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | | |
|--|-------------------------|---------|----------|----------|-----------|
| RE  | Round, solid | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| RM  | Round, stranded | 16 - 95 | 50 - 150 | 95 - 240 | 120 - 300 |
| SM  | Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

Conductor cross-section Cu (mm²)

| | | | | | |
|--|-------------------------|---------|----------|----------|-----------|
| RM  | Round, stranded | 16 - 70 | 50 - 120 | 95 - 240 | 120 - 300 |
| SM  | Sector shaped, stranded | 25 - 70 | 50 - 120 | 95 - 185 | 120 - 240 |

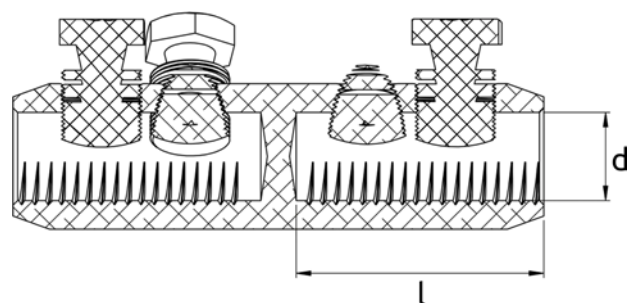
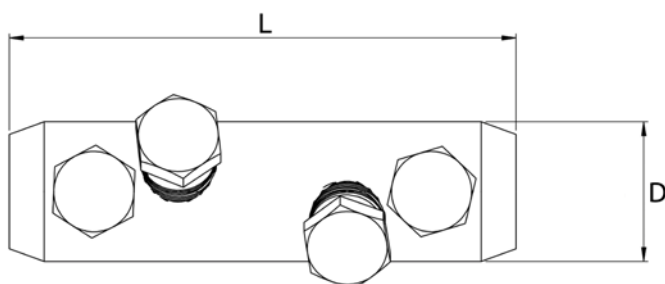
| | | | | |
|-------------------|---------|---------|----------|-----------|
| No. of bolts Ø mm | 2 / M12 | 2 / M14 | 4 / M18 | 4 / M22 |
| L/l | 70 / 33 | 80 / 35 | 120 / 56 | 142 / 67 |
| D/d | 24 / 14 | 30 / 16 | 33 / 20 | 38 / 24,5 |
| Weight (g) | 90 | 170 | 250 | 510 |
| Package (pcs) | 30 | 25 | 15 | 10 |

Bolts: tin-plated brass

Suitable for Al/Cu applications

36kV connectors are also available with brass inner hexagon bolts - to order, replace letter B of the product code with D. For example: MSCM0952D00.

Dimensions





MSCM400

MSCM630

MSCM1000

| | | | |
|--|-------------|-------------|--------------|
| | MSCM4006B00 | MSCM6306B00 | MSCM10008B00 |
|--|-------------|-------------|--------------|

Technical data

Conductor cross-section Al (mm²)

| | | | | |
|----|-------------------------|-----------|-----------|------------|
| RE | Round, solid | 185 - 400 | 400 - 630 | 630 - 1000 |
| RM | Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM | Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

Conductor cross-section Cu (mm²)

| | | | | |
|----|-------------------------|-----------|-----------|------------|
| RM | Round, stranded | 185 - 400 | 400 - 630 | 630 - 1000 |
| SM | Sector shaped, stranded | 185 - 300 | 400 - 500 | 630 - 800 |

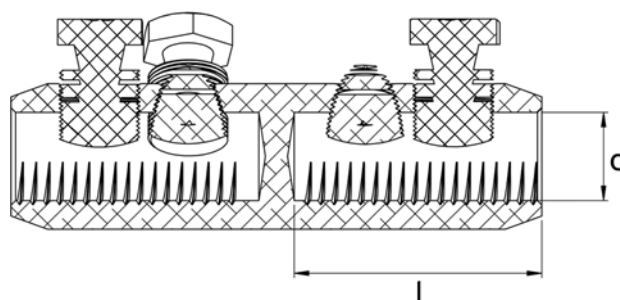
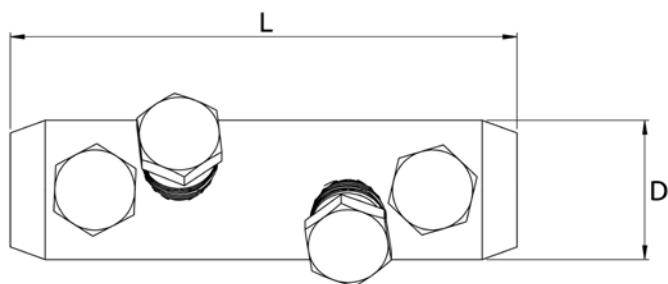
| | | | |
|-------------------|----------|----------|--------------|
| No. of bolts Ø mm | 6 / M22 | 6 / M22 | 8 / M22 long |
| L / l | 170 / 82 | 200 / 94 | 220 / 105 |
| D / d | 42 / 26 | 52 / 34 | 65 / 41 |
| Weight (g) | 800 | 1200 | 1900 |
| Package (pcs) | 5 | 3 | 2 |

Bolts: tin-plated brass

Suitable for Al/Cu applications

36kV connectors are also available with brass inner hexagon bolts - to order, replace letter B of the product code with D. For example: MSCM0952D00.

Dimensions



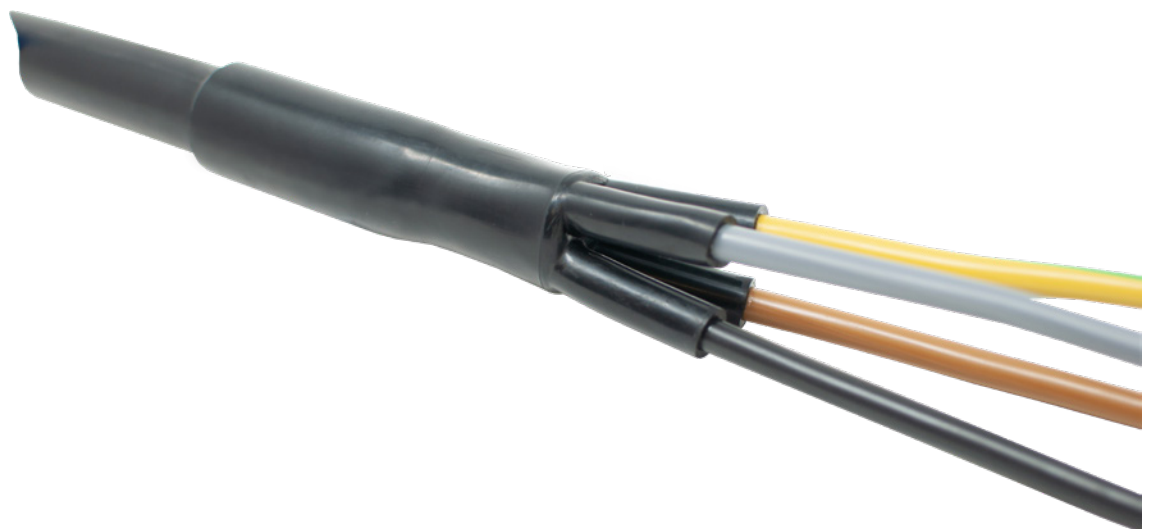
Heat-shrink sets for cables up to 1kV

For applications up to 1kV

Suitable for cables with
PVC/XLPE insulation

Certified according to

EN61238-1 class A



- The termination kits are used for terminating 1kV cables with plastic insulation and outer plastic sheath. Shear Bolt cable lugs are included in the kits.
- Termination kits are available for 3, 4 or 5 core cables and are suitable for both aluminium and copper conductors.
- Sanding and cleaning materials are also included together with instruction manuals for the kits.
- Heat-shrink terminations and tubes are high quality products and make the process of installation easy.
- Heat-shrink cable termination kits are available for indoors and outdoors applications.



| Order code | Conductor size | Lugs | Qty of cores |
|-------------|-----------------------------------|----------------|--------------|
| MSLS0351A10 | Al / Cu 6 - 35 mm ² | 4 x MSL0351A10 | 4 |
| MSLS0701A12 | Al / Cu 25 - 70 mm ² | 4 x MSL0951A12 | 4 |
| MSLS1202A12 | Al / Cu 70 - 120 mm ² | 4 x MSL1502A12 | 4 |
| MSLS2402A12 | Al / Cu 120 - 240 mm ² | 4 x MSL2402A12 | 4 |

Please contact your Customer Service representative for information on kits for 3 and 5 core cables.

- The jointing kits are used for joining 1kV cables with plastic insulation and outer plastic sheath. Shear Bolt cable lugs are included in the kits.
- Jointing kits are available for 3, 4 or 5 core cables and are suitable for both aluminium and copper conductors.
- Sanding and cleaning materials are also included together with instruction manuals for the kits.
- Heat-shrink tubes for cores and outer sheath are high quality products and make the process of installation easy.



| Order code | Conductor size | Connectors | Qty of cores |
|-------------|-----------------------------------|-----------------|--------------|
| MSCS0352A00 | Al / Cu 6 - 35 mm ² | 4 x MSCL0252A00 | 4 |
| MSCS0502A00 | Al / Cu 16 - 50 mm ² | 4 x MSCL0502A00 | 4 |
| MSCS0702A00 | Al / Cu 25 - 70 mm ² | 4 x MSCL0952A00 | 4 |
| MSCS0952A00 | Al / Cu 50 - 95 mm ² | 4 x MSCL0952A00 | 4 |
| MSCS1202A00 | Al / Cu 70 - 150 mm ² | 4 x MSCL1502A00 | 4 |
| MSCS2404A00 | Al / Cu 95 - 240 mm ² | 4 x MSCL2404A00 | 4 |
| MSCS2402A00 | Al / Cu 120 - 240 mm ² | 4 x MSCL2402A00 | 4 |
| MSCS3004A00 | Al / Cu 150 - 300 mm ² | 4 x MSCL3004A00 | 4 |

Please contact your Customer Service representative for information on kits for 3 and 5 core cables.

Gel joints Break

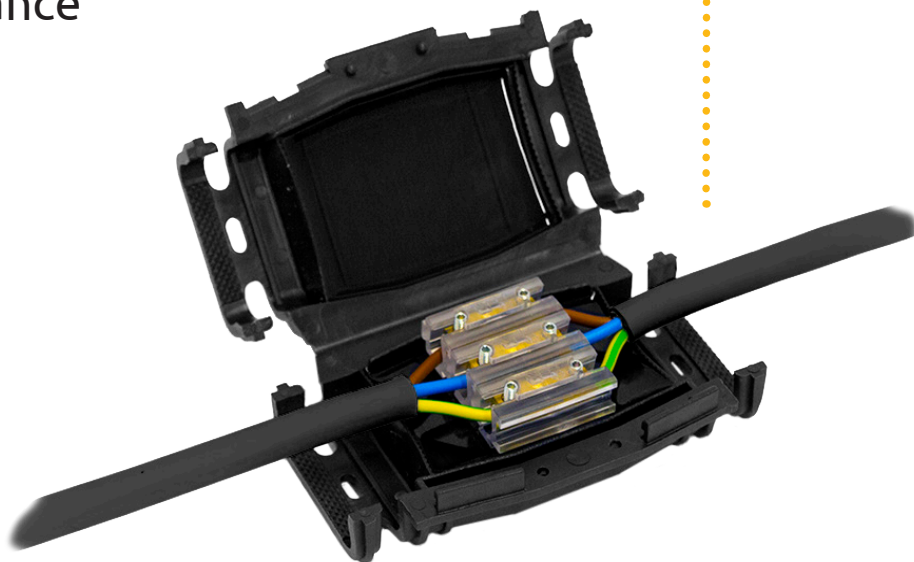
Fastest way to make an underground connection!

No expiration date

IP 68

For underground installation

UV- and chemical resistance



Gel joints Break series is suitable to guarantee insulation of low voltage main and shunted, single-pole and multi-pole connections ranging from 0,6/1 kV.

The list of products is made up of a series for main connections and a series for shunted connections. The first series allows single-pole and multi-pole connections with max. section respectively of 1x185 mm² and 4x25 mm²; the second series allows single-pole and multi-pole shunted connections with max. section respectively of 1x120 mm² e 4x10 mm².

The insulation phase in each joint is made with a separator included in the kit or with the innovative modular insulated terminals, up to five phases with max. section of 35 mm².

Technical specifications

- Protection degree IP68
- Operating temperature from -20 °C to +90 °C

Regulations compliance

- EN 50393 (0,6/1 kV)
- EN 60529
- RoHS Directive 2011/65/EC
- 20-37/2-1, 20-37/7
- EN 60695-2-11



Break 25

Break 30

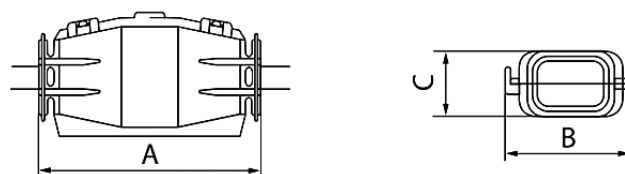
Break 50

Break 50Y

Break 100

| Order code | MBG0025A24 | MBG0030A24 | MBG0050A24 | MBG0050Y24 | MBG0100A24 |
|---------------------------|--------------|---------------|---------------|----------------|----------------|
| Dimensions A / B / C (mm) | 70 / 42 / 24 | 100 / 59 / 34 | 165 / 62 / 36 | 180 / 105 / 36 | 220 / 100 / 50 |
| Package (pcs) | 4 | 5 | 3 | 1 | 1 |

Dimensions



Installation



1. Strip and crimp wires.



2. Dip connection in the gel and block wires at the ends with the included tie-wraps.



3. Verify clip closing and gel overflowing in wire input/output points in order to guarantee a perfect watertight seal.

Components and characteristics

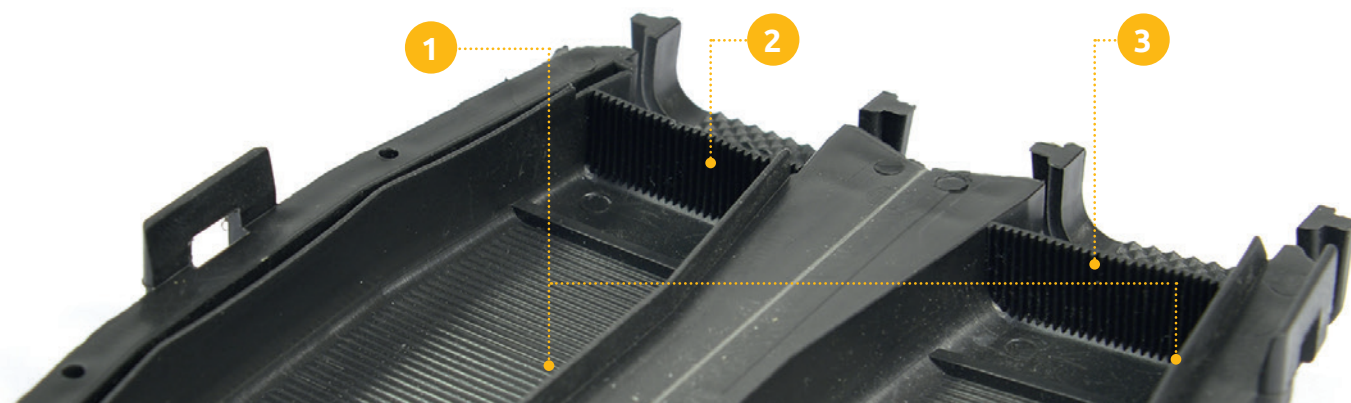
- Two polypropylene hinged shells with patented watertight system, made up of a longitudinal ribbing (1) functioning as the gel containing bulkhead. At both ends there are pre-fractured walls (2) that allow gel overflowing, ensuring a good water tightness.
- Wire slipping is avoided in longitudinal direction thanks to ribbing (3) at the ends of the shells and in transversal direction thanks to wire fixing with tie-wraps included in the package.
- Patented separator made up of two notched plates that allow a reciprocal jointing and two protrusions that block the plates.
- There are two holes at the ends of each model in order to insert and fix tie-wraps. Joint opening can occur only using a tool according to norm CEI 64-8.

Advantages

- Re-enterable connection
- High mechanical strength with wide range of operating temperature
- Fast laying
- Cross-linked gel in the two shells (avoiding additional casting)
- Versatility of application, even in submerged conditions
- High watertight properties
- High dielectric strength
- Non sliding wires
- High strength against chemical agents or UV rays
- No expiration date

Kit content*

- Shell
- Tie-wraps
- Separator



| Order code | Type | Connection type | ● | | ●● | | | | ●●● | | | | ●●●● | | | | | |
|------------|-----------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|----|
| | | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | | |
| MBG0025A24 | Break 25 | Main wiring | 1,5 | 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Branching wiring | 1,5 | 25 | 1,5 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| MBG0030A24 | Break 30 | Main wiring | 1,5 | 50 | - | - | 1,5 | 10 | - | - | 1,5 | 4 | - | - | 1,5 | 2,5 | - | - |
| | | Branching wiring | 1,5 | 50 | 1,5 | 35 | - | - | - | - | - | - | - | - | - | - | - | - |
| MBG0050A24 | Break 50 | Main wiring | 10 | 120 | - | - | 6 | 16 | - | - | 1,5 | 10 | - | - | 1,5 | 10 | - | - |
| | | Branching wiring | 10 | 70 | 1,5 | 35 | 1,5 | 10 | 1,5 | 6 | 1,5 | 10 | 1,5 | 4 | 1,5 | 6 | 1,5 | 4 |
| MBG0100A24 | Break 100 | Main wiring | 35 | 185 | - | - | 16 | 50 | - | - | 4 | 25 | - | - | 6 | 25 | - | - |
| | | Branching wiring | 25 | 150 | 10 | 120 | 10 | 35 | 6 | 25 | 4 | 16 | 2,5 | 4 | 6 | 16 | 2,5 | 10 |
| MBG0050Y24 | Break 50Y | Main wiring | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Branching wiring | 6 | 70 | 2,5 | 50 | 1,5 | 25 | 1,5 | 16 | 2,5 | 16 | 1,5 | 10 | 2,5 | 16 | 1,5 | 10 |

The range of product is made up of three single-pole models MC 06, MC 16, MC 35 that allow insertion of wires with max sections respectively of 6 mm², 16 mm², 35 mm². Models with the same section can be assembled in different configurations from two up to five poles. In three- and five-pole

combination the result is a pyramidal structure that optimises space utilization, especially in applications of resin and gel joints Break (see on page 153). It is also possible to create models with different sections.

Materials

- Self-extinguishing transparent polycarbonate - insulating case
- Brass CW 614 N – conductive case
- Zinc – plated steel – dowels

Technical specifications

- Operating temperature from -20 °C to +90 °C
- Rated insulation voltage: 500 V
- Rated current: 24 A (MC 06), 41 A (MC 16), 76 A (MC 35)
- Tightening torque dowels: 0,6 Nm (MC 06), 1,8 Nm (MC 16), 10 Nm (MC 35)
- Inflammability grade according to UL 94 V-2
- Flame and ignition resistance according to IEC 695-2-1
- Compliance with glow wire test 850 °C (EN 60695-2-11)

Advantages

- Modular capacity from two up to five poles
- Fast and easy wiring
- Double insulation degree per joints connections
- Fast maintenance
- Re-enterable and reusable connection (needed mostly in joints)
- High protection degree
- Application flexibility
- Reduced space utilization with three- and five-pole pyramid structure

Certification and regulations

- IEC/EN 60695-2-11
- EN 60998-1:2004
- EN 60998-2-1:2004
- RoHS 2011/65/CE



MC 06

MC 16

MC 35

MAH0006A24

MAH0016A24

MAH0035A24

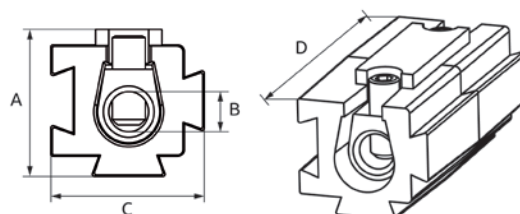
Technical data

| | | | | | |
|----------------------|--------------------------------------|---------------------------------|-------|-------|----|
| In-line connection | max. wire section (mm ²) | 6 | 16 | 35 | |
| Shunted connection | Feed through wire | min. section (mm ²) | 1,5 | 2,5 | 6 |
| | | max. section (mm ²) | 6 | 10 | 25 |
| | Shunted wire | min. section (mm ²) | 1,5 | 2,5 | 6 |
| | | max. section (mm ²) | 1,5 | 4 | 10 |
| Size (mm) | A | 13,2 | 13,6 | 19,2 | |
| | B | 3,6 | 5,8 | 9,3 | |
| | C | 13,8 | 14,2 | 19,8 | |
| | D | 28 | 31 | 40 | |
| Screw, hexagonal key | | No. 1,5 | No. 2 | No. 4 | |
| Weight (g) | | 7 | 10 | 34 | |
| Package (pcs) | | 10 | 10 | 5 | |

Maximum number of terminals recommended to use inside of gel joints Break.

Dimensions

| | MC 06 | MC 16 | MC 35 |
|-----------|--------------|--------------|--------------|
| Break 25 | 1 | 1 | - |
| Break 30 | 3 | 3 | 2 |
| Break 50 | 5 | 5 | 2 |
| Break 50Y | 5 | 5 | 3 |
| Break 100 | 5 | 5 | 5 |



The immediate use with injection, auto-levelling and reenterability make this product very flexible in every application, even in areas with difficult access.

The cartridge package optimise space needs and allows a dosing for specific applications.

Technical specifications

- Operating temperature from -60 °C to 200 °C
- Dielectric strength > 23 kv/mm
- Thermal conductivity < 0,2 w/mk
- Dielectric constant < 5
- Volume resistivity > 2x10¹⁵ ωxcm
- Autoignition temperature: > 400 °C

Advantages

- Ready to be used, wire framed, injectable
- Ecological and non-toxic

- Auto-agglomerating and auto-levelling
- Re-enterable
- Easy to lay without tools
- No expiration date
- Does not need drying process
- High resistance to aging
- Transparent for an immediate connection check
- High and durable adherence
- Dosing possibility, avoiding useless product waste



| Order code | Description | PHS (pcs) |
|------------|--|-----------|
| MGB0002G24 | Insulation mono-component gel in cartridges 300g | 1 / 15 |

InsuGel One, 1 kg

It is the ideal solution for junction boxes filling even when they are installed both horizontally and vertically.

High protection degree for connections is guaranteed only if all holes or any slot in the casing are accurately sealed with sealing paste.

Technical specifications

- Linear shrinkage 23°C / 0%
- Penetration degree 23°C / 200mm
- Hardness (shore a) 23°C gel
- Self-extinguishing (compliant to norm cei en 60695-2)
- Protection degree ipx8 (compliant to norm cei en 60695) with waterproof container
- High insulation resistance up to 3500 v: compliant to norm en 60439-1

Advantages

- Ready to be used without mixing and cross-linking process
- Transparency with connection check
- Easy to lay without tools
- Non-toxic

- Re-enterable even after long operating times
- Reusable
- Auto-levelling
- High insulation resistance
- Flexibility in horizontal and vertical applications
- No expiration date
- Not subject to inhibition process
- Not conditioned by temperature



| Order code | Description | PHS (pcs) |
|------------|--|-----------|
| MBG0001G24 | Mono-component gel in paste form, re-enterable/reusable, 1kg package | 1 |



Distribution blocks SLT

| 1000 V AC/DC

| Bimetal
(Al/Cu)

| Class A

| Certified according to standards EN 61238-1 and EN 60947-7-1

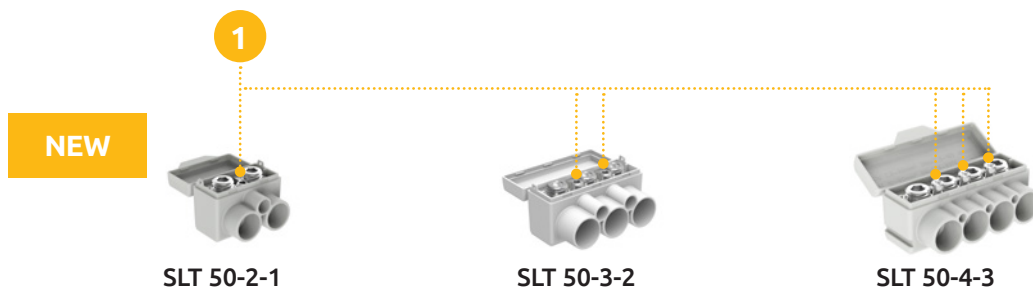


Distribution blocks are designed for copper and aluminium conductors. The blocks are suitable for all types of copper or aluminium conductors with cross-section up to 50 mm² (Al) / 35 mm² (Cu). Multiple copper wires can be placed to the blocks according to the respective terminal type. IP protection class for blocks is IP23. SLT distribution blocks come in 2-, 4- and 6-terminal sizes, with some models providing additional connection (1) points for connecting small conductors (e.g. LED lights).

Distribution blocks are tested and certified class A connectors. Distribution blocks are tested and certified by following standards: * EN 60947-7-1:2009, * EN 61238-1:2003

Distribution blocks are used inside metal poles or in separate boxes. The items are soon available with DIN rails!

** Look more about standards on page 8.*

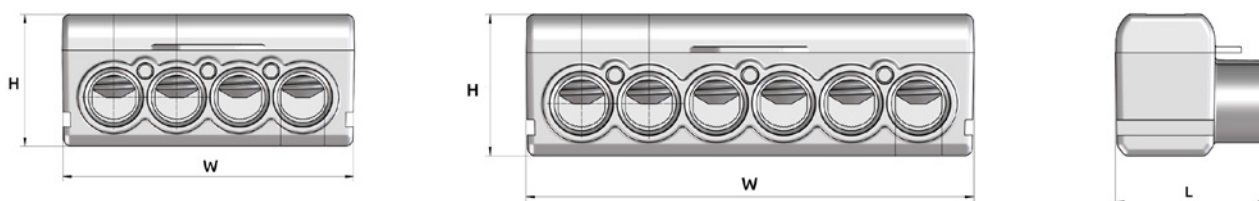


| | | | | |
|--------------|--|------------|------------|------------|
| Grey | | MAS2051A10 | MAS3051A10 | MAS4051A10 |
| Blue | | MAS2051B10 | MAS3051B10 | MAS4051B10 |
| Yellow-green | | MAS2051Y10 | MAS3051Y10 | MAS4051Y10 |

Technical data

| | | | |
|---|--|--|--|
| Conductor cross-section Cu (mm ²) | 2 x (2,5 - 35) + 1 x 1,5 - 6 | 3 x (2,5 - 35) + 2 x (1,5 - 6) | 4 x (2,5 - 35) + 3 x 2,5 |
| Conductor cross-section Al (mm ²) | 2 x (16 - 50) | 3 x (16 - 50) | 4 x (10 - 50) |
| Nominal voltage (V) | 1000 | 1000 | 1000 |
| Nominal current Cu / Al (A) | 135 / 145 | 135 / 145 | 135 / 145 |
| Width / Height / Length (mm) | 36 / 27 / 29 | 55 / 30 / 32 | 60 / 27 / 29 |
| Screw / hexagonal key (AV) | 5 / 3 | 5 / 3 | 5 |
| Tightening torque (Nm) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) 2 Nm (1,5 - 6 mm ²) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) 2 Nm (1,5 - 6 mm ²) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) 1 Nm (1,5 - 2,5 mm ²) |
| Weight (g) | 33 | 49 | 46 |
| Package (pcs) | 18 | 18 | 18 |

Dimensions





SLT 50-6-3



SLT 50-4



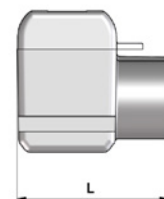
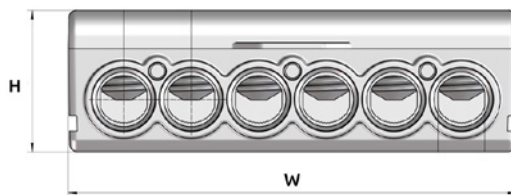
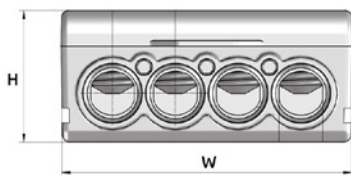
SLT 50-6

| | | | | |
|--------------|--|------------|------------|------------|
| Grey | | MAS6051A10 | MAS4050A10 | MAS6050A10 |
| Blue | | MAS6051B10 | MAS4050B10 | MAS6050B10 |
| Yellow-green | | MAS6051Y10 | MAS4050Y10 | MAS6050Y10 |

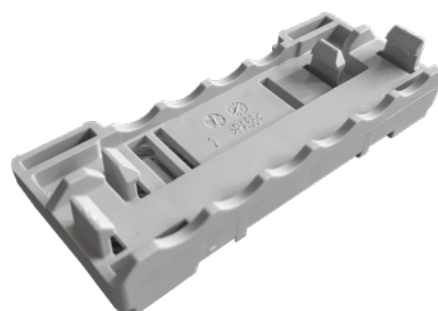
Technical data

| | | | |
|---|--|---|---|
| Conductor cross-section Cu (mm ²) | 6 x (2,5 - 35) + 3 x 2,5 | 4 x (2,5 - 35) | 6 x (2,5 - 35) |
| Conductor cross-section Al (mm ²) | 6 x (10 - 50) | 4 x (10 - 50) | 6 x (10 - 50) |
| Nominal voltage (V) | 1000 | 1000 | 1000 |
| Nominal current Cu / Al (A) | 135 / 145 | 135 / 145 | 135 / 145 |
| Width / Height / Length (mm) | 86 / 27 / 29 | 60 / 27 / 29 | 86 / 27 / 29 |
| Screw / hexagonal key (AV) | 5 | 5 | 5 |
| Tightening torque (Nm) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) 1 Nm (1,5 - 2,5 mm ²) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) | 3 Nm (2,5 - 16 mm ²) 8 Nm (25 - 50 mm ²) |
| Weight (g) | 70 | 41,8 | 61,1 |
| Package (pcs) | 6 | 18 | 6 |

Abmessungen

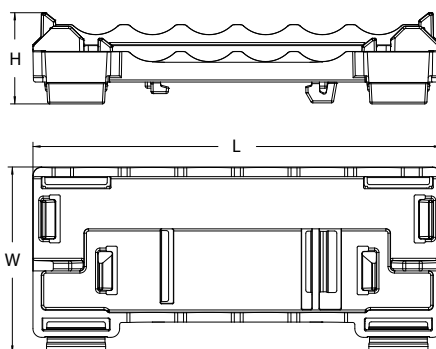


The SLT clamp holder is designed for DIN rail mounting longitudinally or transversally and is made with PA66 in grey.



| | | |
|------------------------------|----------------|------------|
| Grey | ● | MAS0001A10 |
| Technical data | | |
| Width / Height / Length (mm) | 42,5 / 21 / 94 | |
| Weight (g) | 17 | |
| Package (pcs) | 100 | |

Dimensions



Branching connector sealing kit

Branching connector sealing kit

| | |
|-------------------|------------|
| Order code | MAS0002A10 |
| Weight (g) | 5 |
| Package (pcs) | 3 |



TPE (Thermoplastic Elastomer)

- Excellent resistance to weathering, ozone and UV exposure
- Provides good chemical resistance, and excellent electrical properties limited resistance for oils (resists oils as splash)
- Flame retardant grades UL 94 V-0 , halogen free
- Standard hardness 25 ShA – 70 ShA
- Recyclable
- Wide range of colors, easy to customize
- Service temperature range -40 to + 100 °C
- FDA approved grades available

TPU (Thermoplastic Urethane)

- Good resistance to weathering, ozone and UV exposure
- Good abrasive properties
- Limited resistance for oils (resists oils as splash)
- Standard hardness 50 ShA – 70 ShA
- Recyclable
- Wide range of colors, easy to customize
- Service temperature range -40 - + 100 °C
- FDA approved grades available

TPV (Thermoplastic Vulcanizate)

- Show excellent resistance to UV Light; very little change in Delta E
- Improved oil and chemical resistance; Exhibit superior chemical resistance over a wide range of temperature (Oils / Petroleum and Sebum, Automotive fluids, aqueous solutions, acids and bases, organic solvents).
- Flame retardant grades 50 ShA to 50 ShD , UL 94 V-0
- Hardness range 15 ShA to 50 ShD Temperature range continues use up to 125 °C and short-term exposure up to 150 °C. Brittle point lower than -60 °C for most grades. Provides good low-temperature flexibility and impact toughness.
- It looks and feels like thermoset rubber
- Improved compression set at elevated temperatures (over 70 °C)
- Medical/food contact grades from 45 ShA to 50 ShD

EPDM (Ethylene Propylene Diene Monomer)

- Superior resistance to weathering, ozone and UV exposure
- Provides excellent chemical resistance, and good electrical properties
- Resists animal and vegetable oils, steam, water and oxygenated solvents
- Flame retardant grades UL 94 V-2
- Standard hardness 40 ShA – 70 ShA
- Limited range of colors
- Working temperature range -40 to + 120 °C
- EMC grades with attenuation around 40 dB

NBR (Nitrile Butadiene Rubber)

- Limited weathering resistance
- It is generally resistant to fuel and other chemicals. Also resistant to aliphatic hydrocarbons but less resistant aromatic hydrocarbons, ketones, esters, aldehydes and to ozone
- Flame resistance is poor
- Hardness range 20 - 95 ShA
- Working temperature range of -40 to + 125 °C
- Environmental performances: colorability, gas permeability and water resistance are excellent
- Other physical & mechanical properties: adhesion to metal and rigid materials are excellent, abrasion resistance, compression set and tear resistance are good to excellent

CR (Chloroprene Rubber)

- Good weathering resistance, flame retarding. Moderate resistance to petroleum-based fluids
- Service temperature -45 to +120 °C
- Adhesion to many substrates
- Good resistance toward chemicals and ageing
- CR in general has good chemical stability and maintains flexibility over a wide temperature range
- Hardness range 40 – 95 ShA

Q (Silicone)

- Excellent resistance to weathering, ozone and UV exposure
- Also provides excellent chemical resistance and good electrical properties
- Resists oils as splash
- Flame retardant grades UL 94 V-0
- Standard hardness 25 ShA – 90 ShA
- Wide range of colors, easy to customize
- Service temperature range -50 - + 200 °C

First numeral

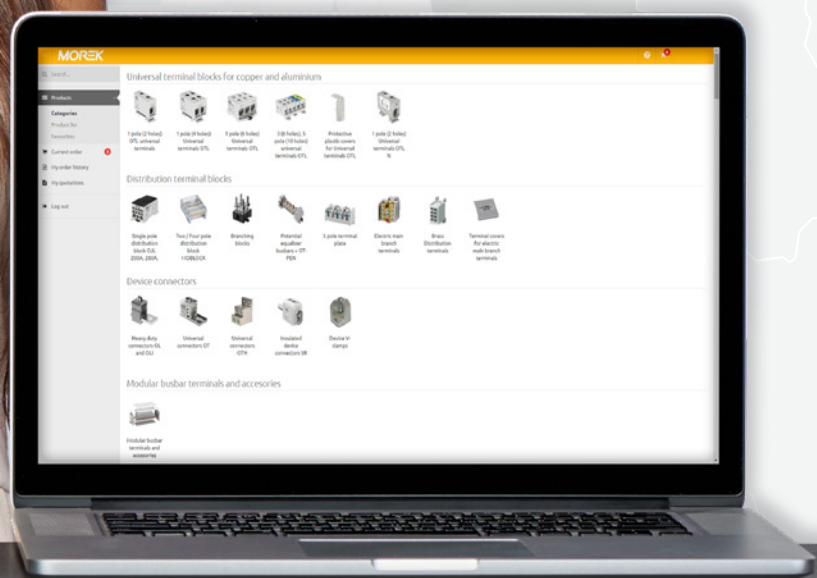
| Protection against ingress of solid foreign objects | | | |
|---|--|---------|---|
| IP | Requirements | Example | Meaning protection of persons against access to hazardous parts with: |
| 0 | No protection | | No protection provided |
| 1 | Full penetration of 50,0 mm diameter sphere not allowed and shall have adequate clearance from hazardous parts. Contact with hazardous parts not permitted | | Back of hand |
| 2 | Full penetration of 12,5 mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts | | Finger |
| 3 | The access probe of 2,5 mm diameter shall not penetrate | | Tool |
| 4 | The access probe of 1,0 mm diameter shall not penetrate | | Wire |
| 5 | Limited ingress of dust permitted (no harmful deposit, refer to standard) | | Wire |
| 6 | Totally protected against ingress of dust | | Wire |

Second numeral

| Protection against harmful ingress of water | | | |
|---|--|---------|---|
| IP | Requirements | Example | Meaning for protection from ingress of water: |
| 0 | No protection | | No protection provided |
| 1 | Protected against vertically falling drops of water | | Vertically dripping |
| 2 | Protected against vertically falling drops of water with enclosure tilted 15° from the vertical. | | Enclosure tilted 15° from the vertical |
| 3 | Protected against sprays to 60° from the vertical | | Limited spraying |
| 4 | Protected against water splashed from all directions | | Splashing from all directions |
| 5 | Protected against low-pressure jets of water from all directions | | Hosing jets from all directions |
| 6 | Protected against strong jets of water | | Strong hosing jets from all directions |
| 7 | Protected against the effects of immersion between 15,0 cm and 1,0 m | | Temporary immersion |
| 8 | Protected against longer periods of immersion under pressure | | Immersion |

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